

PT7 cuts costs

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FERRANTI
Computer Systems

Computer Weekly

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Report highlights 'tragic nature' of Europe's IT record

Is Europe going down the drain?

by John Riley
A HARD-HITTING report by two top economists to the European Parliament recently lashed out at the "tragic nature of Europe's poor performance in the field of information technology".

The 130 page report, commissioned by the Parliament, was written by the right wing Principal of the London Business School, Professor James Ball, and the left wing French economist Michel Albert. Both agree that Europe is going the way of the Balkans after the first industrial revolution.

They think that Europe is "slipping on the downward path of relative underdevelopment until ultimately it will be no more than a geographical expression." This is arising because Europe is not pooling its resources and is failing to respond to the challenge of what they call the third industrial revolution.

Both Albert and Ball agree that Europe has to get its act together by encouraging high technology industries, ensuring European-wide technical standards, and broad R & D programmes, as well as proposing a series of monetarist aims.

The European Parliament is likely to debate the report in September, and the document could influence future policy. Socialist Euro-MP Barry Seal has reservations: "It is an interesting academic exercise but probably won't be too effective as European countries now are working together less closely than in the past."

Both authors point to the failure of R & D in new technology, which they believe has been "squandered" and concentrated in "vested" sectors. That is illustrated by Japan capturing 40% of the world microprocessor market between 1977-81 with an R & D budget of \$250 million for microprocessor development while Europe has only gained 10% of the market with a \$500 million budget.

Pointing to Europe's \$10,000 million deficit in information and electronics 1982 trade balance, Albert calls for an increase in the community R & D budget to about \$20,000 million by 1993.

He believes the current R & D programmes are inadequate: "The Esprit programme although a useful step in the right direction, is 'ridiculously small', he said, "and if R & D continues to be organised at a national level it will become less and less competitive."

Ball hit out at European companies: "It is a clear nonsense that the major European companies in the field are busy signing agreements for Japanese technology rather than undertaking a programme of European integration," he said.

They both identified the vicious circle Europe is in. Europe is not manufacturing enough IT equipment and foreign imports are flooding in. The imports cause job loss in Europe.

Job loss drains Europe's resources and intensifies reliance on technological progress, and on.

"One only needs to look at the debacle Europe has suffered in information technology to understand that there are only a few years left to indulge in this self-destructive game of every man for himself," concluded Albert.

Leader Comment - page 11

Five want new PBX standard

by John Riley
FIVE top PBX and computer companies are to adopt a new interface standard to link computers and PBXs announced last week in the US by its developers Northern Telecom and Digital Equipment.

Computer manufacturers Data General and Hewlett-Packard and digital PBX makers Rolm, Mitel and Intecom have announced their commitment to develop the interfaces worked out by Northern Telecom and DEC.

The standard, called cPI (computer to PBX interface), is based on the North American T-1 carrier standard originally developed by Bell Laboratories, which allows computers and PBXs to be separated over a transmission link and to be connected remotely.

The standard cannot be used for remote connection in Europe, as the T-1 carrier is a standard 24-channel digital transmission system adopted for the North American public telecommunications network.

It transmits at 1.544 Mbits as opposed to the European PT-1 system which transmits at 2.048 Mbits and which is a 30+2 channel system.

Although he was not able to say whether Northern Telecom and DEC are working on a similar interface for Europe, Richard Lewis, Northern Telecom's product manager for Business Communications Systems in Europe thinks that "there is likely to be strong pressure from European PBX suppliers and computer manufacturers to go to the 30+2 standard at 2.048 Mbits for a similar interface."

A Northern Telecom spokesman said that UK licences GEC and Reliance would be free to further develop the product and would be entitled to take advantage of US development work - although it would be up to them.

Apple blocks Taiwan move

by George Black
APPLE has blocked an application for details of one of its micro operating systems to be revealed to a Taiwanese manufacturer.

The application was made by Sirel (UK), British importer and distributor of the Micro Professor machine, made in Taiwan by Multitech.

Apple applied for an order allowing disclosure of details of Apple's system to Multitech. But Apple's counsel Guy Burkitt told the court it did not want the information to be released in case it became "a copyist's charter".

And Mr Justice Whitford, ruling in Apple's favour, said he was not prepared to make any order which would mean information "getting straight back to Taiwan at this early stage of the case."

The hearing is scheduled to go ahead next Wednesday. Apple claim its programs have been copied for use on the Micro Professor.

IBM sales policy pays dividends

by John Kavanagh
IBM'S emphasis on sales rather than rentals continues to pay dividends. The industry leader's half-year results show an 18% increase in business to almost \$17,880 million and 24% growth in net profit to \$2,319 million.

Last year IBM confounded financial analysts with a spectacular recovery from a mediocre year in 1981.

That recovery included a 30% increase in sales business and a mere 2.6% growth in rentals.

That trend is even more marked this year. At the half-year stage the company's sales income has risen by 47%, while rental business has fallen by 13%.

Chairman John Opel plucked out the growing sales income as a big contributor to the half-year results.

And he said IBM's growth was stronger now than at the same time last year.

Products highlighted by the half-year report include the 308X big mainframe range and the 3380 high-capacity disc systems. Both



OPEL... Strong growth.
"continue at high volumes worldwide".

At the other end of the product line, the Personal Computer "continues to exceed projections" while display terminals "continue strong".

Opel added that, despite the recession, worldwide demand for information products and services remained strong.

Included in the half-year results are IBM's second quarter figures. Income rose up 19% at \$9,590 million and net profit increased 25% to \$1,343 million.

ICT dispels doubts about its desk-top

by Philip Hunter
ICT ON Monday demonstrated its long-promised offering in desk-top communications and removed lingering doubts about the product's existence. But it may not be able to produce and sell it.

ICT is desperately short of cash and, unless money can be raised quickly for production, the product, called Trienco 2000, could suffer an early death.

The company will find it difficult to raise money from shareholders after a bitter dispute over share pricing on the Luxembourg stock exchange.

And the company's credibility has been hit by the behaviour of its share dealers. Tring Hall, which last week had its licence to issue shares withdrawn.

ICT managing director Cecil Kernot admitted that financing the product was going to be difficult for more money, because "I don't think we'll be able to get it."

He added that he would be attempting to raise funds in the US, where he also expected Trienco 2000 to be more successful because of its superior integration of telecommunications.

The product will be marketed by Triple M, which is a wholly-owned subsidiary of ICT.

Trienco 2000 has a touch sensitive keyboard for entering and editing messages that are displayed on a small four-inch screen. There is also a "hands-free" speaking facility, and memory for 32 frequently used numbers to be dialled automatically.

The box can also be used to access Prestel and has a small printer for text or graphical data.

Trienco 2000 costs \$1,000, making it cheaper than its main rival from Northern Telecom.

ICT has also launched a portable handset called Trienco 1000 that can be used for dialling and receiving telephone calls, as well as acting as an intercom.

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by George Black... Big claim for the software.

Data General merges the mini and the micro

by George Black
DATA General last week launched a dual processor machine at the bottom of its range which it says will end the distinction between the mini and micro.

The Desktop Generation will incorporate both Data General's own micro Eclipse chip - claimed to be comparable in power to Motorola's 68000 - and the Intel 8086 on which IBM's successful personal computer is based.

The announcement marks Data General's re-entry into the small computer market after its miscalculated Enterprise project. The Enterprise, built on the 16-bit Nova chip, was initially overpriced and lacked software support.

Savage but belated price-cutting failed to shift the boxes off the shelves. This time Data General

has acknowledged the first commandment of computer law, that purchasing decisions are software-driven, by making its micro CPM and MS-DOS compatible.

The microEclipse chip, which handles all I/O functions, is said to enhance the 8086, making it appear to run faster than other micros. The combination supports five operating systems.

Introducing the machine, president Ed de Castro said that no manufacturer has yet offered desktop micros integrated into the world of minis, superminis and mainframes.

"This will bring the strongest array of software available on any desktop," he said.

The family of three - models 10, 20 and 30 - undercuts IBM by a small margin, with an entry

level of £2,500. It is the Model 10 which features the dual-chip system, the other two being Eclipse-dedicated.

Vice-president Robert Miller said Data General believed the dual-chip hardware was a unique invention which it would be seeking to patent.

Model 10, by supporting both Microsoft's MS-DOS and Digital Research's CP/M-86 operating systems, gives users access to the vast libraries of IBM-compatible applications programs now being turned out by independent software authors.

"They also have access to Data General's own mini software systems MP/AOS, RDS and AOS, which Data General claims are more popular among users than the acclaimed Unix.

The system can support users at once, so that one can run a Peachtree system under MS-DOS while the other uses AOS to carry the Comprehensive Electronic Office Data General's package integrating word processing, electronic mail.

John Crawford, general division vice-president, said firms had invested heavily in the first generation of desktops.

"All too soon the limited personal computers become - when their users were exhausted there was no more to go," he said.

Shipment both to the U.S. and Europe will start in September from the North Carolina plant. Production will also be under way later this year in Hong Kong.



BROUGHTON... Realistic.

Mini manufacturers step up sales drives

by John Riley
TWO minicomputer manufacturers, Wang and Norsk Data, both stepped up their third party sales drive last week.

Wang is concentrating on the lower end, drumming up high street dealers to sell its Professional Computer, while Norwegian company Norsk Data is aiming at systems houses to sell its minis.

Following its recent seminar for potential dealers in London, Wang last week held a similar seminar in Manchester for about 25 selected dealers.

Reg Broughton, Wang UK's director of marketing support services, told them that Wang intends to give its dealers 90% of the small

business market (under £5 million turnover), 50% of the medium market, and 10% of the big accounts (over £150 million).

Wang is balancing its direct and third party sales organisation through its Independent Sales Organisation which has been set up to ensure there is no conflict.

Wang hopes to have a network of about 80 dealers. It has about 20 lined up already. Vic Kitchener, ISO manager UK, affirmed that Wang would not muscle in if dealers win large accounts.

The company does not expect its new dealers all to succeed. "I expect realistically that about 10% will go to the wall," said Broughton. "They will expand too

quickly, and overextend themselves." Broughton added that Wang's aim is to become a £5 billion company by 1990, and of this 20% will be direct sales.

Wang's unaudited figures for 1982 are \$1.53 billion, a 32% increase on last year. Wang UK is celebrating because it broke through the \$100 million order mark, and had revenues of about £50 million, an increase of 47% over last year.

The main effort is towards the Professional Computer, for which the company has a budget target of 5,000 next financial year.

Since its launch in January, about 350 have been sold, although the machine has only been

available in volume since April.

The Professional Computer will be the focus of a battery of announcements coming up this autumn, an aperitif of which includes the three port R8232 board for the PC, and IBM 3270 emulators launched at Anaheim in the US. They are being anglicised and will be launched in the UK next month.

Norsk Data, the Norwegian minicomputer manufacturer, started its push to attract OEMs and systems houses last week by giving a seminar in London to about 30 OEMs.

Jim Allen, Norsk's commercial sales group manager, outlined the advantages to OEMs of signing up

with Norsk Data. "We give a pound discount based on the value, not on the number of sold," he said. "Our discount ranges from 20% on sales of £100,000 to 32 1/2% for sales over £500,000."

"Norsk Data does not work with its OEMs," he asserted. "Our sales force is not bound and won't muscle in on your account. He wants about 10 OEMs to offer incentives to attract the OEMs."

Neither Norsk Data nor Allen expect their systems house to have exclusive relationships with them. "We don't expect exclusivity," said Broughton, and Data's marketing director, Richard Norton agreed.

BT makes a commerce Milepost

by Donald Kennett
LAST week a British Telecom region joined the commercial systems houses with the launch by North-east region of Milepost Business Systems.

The Leeds-based venture's first product is a turnkey office automation system based on the Scrapbook information retrieval and electronic mail package originally developed at the National Physical Laboratory in the early 1970s.

North-east region has a reputation within BT for being go-ahead and independent. Its previous initiatives have included arranging leasing facilities for customers through Lombard North Central Bank, and taking on an agency for Timeplex multiplexers independently of BT as a whole.

These steps were taken by the region's former data communications manager Bill Ward, who is now general manager of Milepost.

The move fits in with chairman Sir George Jefferson's plans for BT to become an entrepreneurial and market-oriented outfit before privatisation.

The North-east is giving the lead to the rest of BT's 61 areas and 10 regions, which became locally managed profit centres in the reorganisation that took effect in April and which are expected to be among Milepost's first customers.

Midlands Region, for one, is considering setting up its own branch of Milepost, for which staff of the original branch would act as consultants.

The in-trading becomes more complex with the involvement of BT Merlin, the recently established division of BT Enterprises, from which Milepost may buy terminal devices and to which it may supply minicomputer-based office systems.

Plans for the reorganisation of BT pre-dated the government's plans for its privatisation, but together they mean that up to 90 separate companies - counting the additional profit centres in BT Enterprises and BT International - could be let loose on an expanding UK communications market.

Ten years after it was written, Scrapbook is still regarded as an advanced system by those involved with it - in BT, CTL (on whose machines it was developed), Triad Computing (which adapted it to run on DEC machines), NPL and user organisations including Shell, the Ministry of Defence and the European Commission.

Milepost will sell the system in two versions, based on CTL kit, the basic word processing and message handling version called MP2000 and an enhanced version, MP3000, which additionally has form-filling screen handlers, user-configurable transaction handlers and a batch processing capability.

British Telecom has turned in a £365 million profit as it prepares to be sold to private investors. Profit was 20% down on the previous year's £458 million, but the dip was put down largely to a change in equipment depreciation charging. Those changes cost BT £145 million and without them the profit would have been up 11% to £510 million. Turnover rose 12% to £6,380 million.

Ward... Now general manager of Milepost.

Other universities did not plan so rigorously as Salford, he claims, and he knows of two universities that have a shortfall of 100 students each on 1981 for this October's intake.

John Davies, professor of electrical and electronic engineering at Aston University, and who is himself taking voluntary redundancy this week said: "The University Grants Committee didn't intend engineering to be cut back so much, but more engineers will take early retirement than say, theologians or philosophers, because they can do things outside the university environment and they also have an older age profile."

Davies will act as a consultant. Both professors say there is no problem in placing students, and that there seems to be a shortage of electronic engineers already.

A spokesman for British Telecom said there was a problem finding good electronics graduates, and some departments were having to look very hard for them.

TUC wants pension funds diverted

by George Black
HIGH technology should be a key priority sector in the rechanneling of Britain's pension funds, says a new report from the TUC.

The TUC urges the setting up of a national investment bank to harness the £83 billion assets of the pension funds to regenerate British industry. Service industries with good export potential should also get the support of the pensions

bank, it says.

The fund's policies have reinforced the decline of UK industry by not providing the right kind of investment capital and thus starving the new growth sectors, according to the report published on July 14. The funds have been increasingly investing overseas instead and avoiding any risky undertakings.

Trustees of the funds, which

have increased in volume twenty-fold since the 1960s, should take their duties more seriously and not just act as a rubber stamp, says the TUC. They can themselves bring about major changes to get the vital cash for the sunrise industries such as computers.

They should ask investment managers what they are doing and why and find out whether they are helping to create new jobs, the re-

port urges. The TUC plan calls for local enterprise boards to be established for regional economic planning along lines already taken by five large public authorities.

A legal maximum of 10% should be imposed on investments overseas, it says. Trustees should press for an alternative to the highest short-term profit approach and argue the case for a wider and longer-term view of risk.

BTG eyes spelling bee

by George Black
AN expert system to monitor spelling which was developed at Bradford University may be adopted by the British Technology Group.

Expert Speller derives from a PhD project by David Fawthrop and has been in use at the university since last October.

In 80% to 90% of spelling errors the system knows what you meant to put, claims Fawthrop, who has set up ADAT (Artificially Intelligent Devices and Techniques) in Halifax to market it.

BTG officials who have seen and approved the system now want Fawthrop to produce a "business plan" which he will have drawn up by the autumn.

He investigated more than 1,300 spelling errors and found that they broke down into a small number of categories for which rules could be written. Those rules were written into a Fortran program to prevent the system suggesting unlikely words when a mistake was made.

Lords won't alter protection

by our Parliamentary Correspondent
LAST week saw a flurry of Parliamentary activity relating to information technology. Government ministers reported on their computer plans (see page 5) and the two houses got down to dealing with two major bills: the Telecommunications Bill in the Commons and the Data Protection Act in the Lords.

An advisory committee will not be appointed to back up the data protection registrar, Home Office Minister Lord Elton ruled. He rejected a move by former Labour Lord Chancellor Lord Elwyn-Jones to amend the Data Protection Bill in committee to require the committee to be set up.

Elwyn-Jones complained it was "entirely ineffective" for the government to delay decision on the need for such a committee. The registrar would face a multitude of difficult issues, he argued.

Lord Elton feared that a statutory committee would lead to "an

element of rigidity". The Opposition amendment would leave the committee without functions, duties or powers - "a motor car without an engine".

The amendment was thrown out by 96 votes to 77.

Proposed codes of practice for data users were also rejected. Lord Elton added that users who hired out space computer capacity to others would not have to make a separate registration to cover their bureau role.

The Telecommunications Bill began its second journey through the Commons with new Opposition threats to fight it in committee.

Trade and Industry secretary Cecil Parkinson said it would be a major disadvantage for Britain to lag behind modern developments. Failure to seize the opportunities now opening up would deprive customers of the benefits and lower costs of new technology.

The world market for telecommunications products would be

worth many billions of pounds each year for as far ahead as could be seen - an enormous market opportunity for British manufacturers. The bill would give the industry a chance to develop freely, he said.

BT would be able to seek finance in the market. Customers were already benefiting by the chance to choose equipment from various suppliers. Over 100 products of this kind were now on the market. Businesses could choose their telefax or branch exchanges.

The general public was only just waking up to the new range of goods. Britain had the most liberal value-added network services in the world; 46 service providers had taken advantage of the licence, which would be a major growth area.

He expected to make an announcement before the summer recess about Mercury's international connections.

For the Opposition, Stan Orme said BT could get its increased



investment by being removed from dependence on the public and borrowing requirement and tending its external financial affairs.

Labour MP Jack Dromey pressed IT Minister Ken Baker to the future of Rair.

He wanted to know if it would be sold to private enterprise. He was alarmed by reports that it would be done through an agency can share flotation. He wanted a second UK factory in the north. Baker believed it was time for private involvement.

Rair gets a million

by Nuala Moran
UK MICRO manufacturer Rair is to get a £1 million injection from a top City institution, the Prudential Assurance Company and the Merchant Navy Officers' pension fund.

Commenting on the investment Mark Potts, managing director of Rair, said: "With our existing financial facilities this funding gives us an important financial capability to fully exploit the demand and the market, in particular for the new Rair business computer."

It will enable our microcomputer products to be developed, marketed and supported in the quantity the market demands."

This is the first time Rair has gone to the City for money. Since

the company was founded in 1975 its growth has been funded from existing cash flow.

Potts explained the reason for the move. "We felt after our worldwide marketing agreements last year with ICL, that any financial partners we became involved with should be drawn from the top level of the major City institutions," he said.

Rair licences ICL to manufacture and market its Black Box range of OBM/technical microcomputer systems on a worldwide basis as the ICL personal computer.

A spokesman for the Prudential explained that it was not policy to canvas unquoted companies. The Prudential was approached by Rair.

Concurrency is in at IBM

by George Black
IBM Personal Computer users will now be able to get the applications-rich Concurrent CP/M-86 operating system after a change of heart by the industry leader.

This is a victory for CP/M. Digital Research because IBM originally turned to Microsoft when Digital declined a fixed price contract. Now IBM has decided that concurrency is such a vital facility it has waived its normal \$1.5 million contract maximum.

Salesmen have been telling IBM bosses that single-tasking is on the way out and that larger-memory microcomputers will need concurrency to make them attractive to buyers.

Meanwhile, Microsoft, which has been given a leg up by IBM with the adoption of MS-DOS as the industry standard, is asking users to stay with them for the

release of MS-DOS 3.0, which, it is claimed, will give the lead into Unix multi-tasking this autumn.

IBM is offering Concurrent CP/M-86 on its 286, the upmarket hard-disc PC which will compete head-on with ACT's Sirius and Apricot machines, DEC and Texas Instruments.

"I marketing manager Dave Monk said it was continuing to back both horses in the software race, of which there was no end yet in sight. Concurrency was "very key" in this race.

"You do need to do at least two or three things at once, such as the print function while you are getting on with something else."

Microsoft says that MS-DOS this version will be "more truly concurrent" than Digital's product, though the specification has not yet been nailed down.

Experts exonerate VDUs

by Howard Katten
VDUs POSE no threat to eye health, a research panel has claimed.

The panel, a group of experts assembled by the US National Research Council (NRC), reviewed 12 previously-reported studies to reach its conclusion.

The NRC group did its work under contract to the US National Institute for Occupational Safety and Health (NIOSH), a government agency charged with overseeing safety in the workplace.

Niosh, a controversial agency since its inception, has long been a bane of conservatives here and under the Reagan administration has had a conservative head. NRC is a private organisation with, however, strong government ties.

The general conclusion of the 12-man panel was that VDUs pose no inherent risk of cataracts or other permanent tissue damage, according to panel chairman Edward Rinalducci, Professor of psychology at Georgia Institute of Technology. Problems associated with VDUs do arise, he said, because some older VDUs are not ergonomically designed, have been placed in poorly-lit work environments, or are generally uncomfortable.

This might lead to ailments such as backache, eyestrain, and so on.

The 12-person panel, representing disciplines such as ophthalmology, engineering, and psychology, reached its conclusion after reviewing other papers, and did no original research.

Spokesmen for organisations representing labour, such as the AFL-CIO (American Federation of Labour-Congress of Industrial Organizations) and Nine to Five, a group representing female office workers, say the report presents an overly optimistic picture.

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RITA

THIS year Computer Weekly will be sponsoring two major awards for companies in the UK computer industry under the Recognition of Information Technology Achievement (RITA) scheme.

In conjunction with the National Computer Centre, Computer Weekly will sponsor the award for "systems innovation of the year" and it will independently sponsor the award for the "new comer of the year".

Details of the criteria that companies should fulfil and an entry form will be published several times, starting next week in Computer Weekly.

The deadline for entries will be Monday, October 3 and prizes will be presented to the winners at the RITA Awards Dinner, January 17, 1984 at The Grand Hotel in Birmingham.

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CAD cuts airport design time

by Nuala Moran

THE application of CAD techniques to the design of Heathrow's fourth terminal cut the time taken to do the job by a year, according to Ken Gilham, of Scott, Brownrigg and Turner, the architect on the project.

He was speaking at the annual ARC award for outstanding use of CAD techniques. The award is presented annually by Applied Research of Cambridge (ARC), a CAD systems house.

Scott, Brownrigg and Turner won the award for the use of CAD techniques on the design of Terminal 4. This is the largest construction project in hand in the UK at the moment.

When it is completed in 1985 it will handle 22,000 people and 3,000 cars a day, and have facilities for 40 planes.

The application of CAD techniques to the project began in 1979. During design work, about 1,500 drawings were produced in 13,000 workstation hours. Gilham said: "Using CAD techniques doesn't affect the conception or the design. But it does help enormously with the speed of response in terms of producing drawings."

But, he added: "The techniques do aid design by giving a more powerful tool to the designer. They make it easier and faster to make alterations on a drawing."

Scott, Brownrigg and Turner (SBT) was the first UK architectural practice to use CAD. It started off using a bureau service and quickly realised the benefits of CAD. The company bought two General Drafting Systems from ARC in May, 1980.

The General Drafting System

systems are based on Prime 150 and Prime 550 computers. SBT has graphics workstations linked to the 550 and three to the 150.

SBT handled all the drawing for Terminal 4. Gilham said that having all the information on discs makes it possible to do monthly updates of drawings, so it is easier to keep a check on exactly what is happening on site.

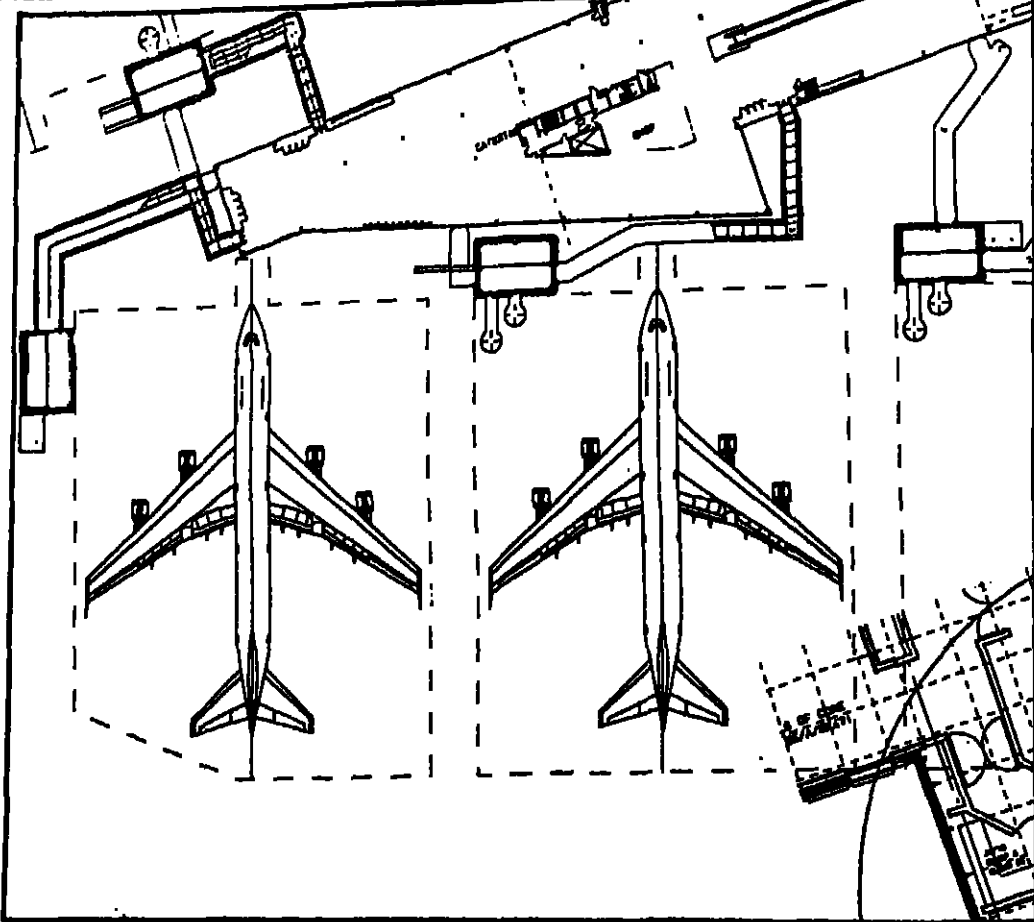
It also reduces the number of mistakes that occur in the construction as there are no discrepancies between drawings. "There are also great advantages in being able to change the scale of a drawing without having to redraw it," Gilham added.

It is not possible to assess at the moment how much money has been saved by using CAD techniques. "The cost of each stage of the project is being closely monitored and when it is finished we shall go back and try to estimate what the costs would have been without the use of CAD," explained Gilham.

He suggested that the success of CAD techniques on the Terminal 4 project will mean building sites are computerised before long. "Instead of generating all drawings in the architect's offices a disc will be sent to the site and the drawings produced there."

Gilham made a plea that, as the use of techniques spreads, efforts should be made to ensure that standardised drawings are produced.

Ed Hoskins, managing director of ARC, commented that the successful application of CAD to the design of Terminal 4 means that CAD has reached a high level of maturity.



Design of Heathrow's fourth terminal won Scott, Brownrigg and Turner the ARC award.

Cable shopping may wipe out high street business

by Donald Kennett

ELECTRONIC shopping via cable networks will make high street shops redundant and destroy British industry. It will also undermine local democracy and community services, as local authorities' main income is from the high street.

This was the warning given to the Greater London Council at its public hearing of cable last week by Henry Fabian, secretary of Wandsworth Chamber of Commerce and Trade.

"The economic consequences of this are really horrifying," he said. "Large, aggressive foreign companies would advertise cut-price goods on cable channels, backed by seductive promotions such as the chance to enter a £5,000 prize draw. All the captive cable watcher would have to do would be to push a button."

On the other hand it was essential to have interactive services on cable network, because the UK was at the centre of international commodities trading.

"It will be essential for commercial markets to have access to information, and cable appears to be the best way of getting it," Fabian said. "But the costs are enormous and I don't think it has been properly costed."

The answer was to have cable services properly regulated to protect small business, he said.

John Hopkins of Fantasy Factory Video said that the only unique thing about cable networks was that they could be interactive. "Using banking, shopping and security services, computer programs and other computer-based information banks may well be more interesting than the things coming down the other way," he said.

Constant audience monitoring was an obvious application of the data collection capabilities of cable networks, he added.

"As an independent producer, I would like to know not only how many people are interested in my material but what they have to say about it."

He also thought that it was important to have some kind of parallel to the relationship between libraries and bookshops — so that while it should be possible to buy information goods and services, it

should at the same time be possible to get them free.

Otherwise, he said, there would be a danger of dividing society into information rich and information poor sectors.

Geoff Andrews, the newly-appointed chief executive of the Videotex Industry Association, echoed the need for the benefits of cable to be available to all, irrespective of their wealth or where they lived. This was the main aim of his association, he said.

Using videotex as the means of putting interactive services, such as banking and shopping, on to cable networks would be a way of reducing the cost of provision. There was a close relationship between videotex and cable, he said, and therefore the videotex industry should be represented on the Cable Authority when it was set up.

He hoped the Cable Authority would see the need for a code of practice similar to his association's to protect subscribers' interests.

Asked to what extent videotex needed cable, Andrews said that the videotex industry did not need cable, but cable needed the capability of videotex to deliver interactive services.

The chairman of the London meeting, GLC industry and employment committee chairman Michael Ward, objected to the government's planned procedure of evaluating proposals for the 12 pilot cable projects "in secret".

The GLC intended to ensure that the franchise applications

were published, that local organisations in each area were consulted and that there was adequate debate on them.

"We are committed to the view that local authorities should be involved," he said, "not to control the operation of the networks, but to ensure there is a proper structure for accountability."

Only that structure will ensure that cable is used to the benefit of local people and not just to enrich a few multinational corporations. It should devolve power rather than concentrate it."

He hoped that the two hearings sponsored by Sheffield City Council and the GLC would enable everybody to learn more about cable. A report on the evidence given at them would be published in the autumn, he said.

A written paper on GLC policy for cable said that, as it was faster to develop a new technology than to stop it in its tracks, the GLC would aim to steer this technology in desirable directions so as to mitigate the bad aspects and maximise the social benefits.

It would press for cable to be introduced in an integrated national way and for the whole of London to be cabled uniformly in an identifiable time span.

Applications for cable network and service licences and franchises for the first 12 pilot projects will have to be submitted to the Department of Trade and Industry and the Home Office by the end of August.



High street shops are threatened by cable networks.

SALES BR

ADP sells Megabyte for £1.9m

ADP NETWORK Systems scooped its biggest ever order for a Megabyte computer system for BL Systems for £1.9m. The Megabyte system is a multi-processor software to link three DEC central processors, which have 4Mbytes memory, 1.6Gbytes disc storage.

Newbury deal

SOUTH West Water has ordered £50,000 worth of compatible cluster computers from Newbury Data. Eight newly-announced C8 controllers will link 42 new Data VDUs and 16 mainframes to the authority's ICL mainframe in Exeter.

Britoil links up

BRITOL's exploration department has ordered two links from Versatec Electronics to connect two remote data plotters into the newly-named company's computers. The cables will be buried in Telecom's ducts.

Failsafe order

COMPUTER Technology UK's main competitor in the market for fail-safe hardware, has won two orders for its 8000 series computers. One order came from the Army Royal Electrical and Mechanical Engineers, the other from a fish maker of hydraulic tanks.

Music firm aid

MUSICAL Instruments of France's Matra Group, now 51% owned by the state, plans to manufacture and market a family microcomputer at a price of under 1,000 French francs (£90) before the end of this year, chairman Jean-Luc Lagardere told a shareholders' meeting.

Eclipse sale

DATA General has made the sale of its Eclipse 32-bit computer to Express Dairies. The sale will be installed at the company's headquarters in the Midlands, and represents a £190,000 investment in a total £1.5m investment over the last few years.

Ferranti three

THREE new orders for Ferranti computers have been awarded to supply a computer control system for a new Morecambe Bay gas field. The £200,000 order for four control systems from a chemical firm and a £150,000 order for another gas processing system from Barrow Onshore Gas Terminal.

US carve up

TWO US companies are vying for a \$250,000 order for a computer system from the American Revenue Service. The contractor is Sigma Data, which will supply peripheral support services, but the share of the contract will go to Zilog for the \$800,000 system for word processing and financial spreadsheets.

Priam wins order

THE UK subsidiary of Priam won a £250,000 order for a telephone manufacturing system to supply 250,000 telephone sets. The 1240 digital telephone sets are to be produced by BTM, a subsidiary of ICL. The BTM 1240 is a part of the System 12 range.



BRILL... Most recent recruit, and once of DEC.

Matra plans a £90 family micro

by Jack Gos

FRANCE's Matra Group, now 51% owned by the state, plans to manufacture and market a family microcomputer at a price of under 1,000 French francs (£90) before the end of this year, chairman Jean-Luc Lagardere told a shareholders' meeting.

The new micro, developed jointly with Tandy in the framework of the joint venture company Matra Tandy Electronique, will be a direct competitor for the only other French micro in this price range. This is Thomson-Brand's TO-7, which is priced at over 3,000 francs (£270).

Matra has manufactured over 6,000 of Tandy's TRS 80 Model 2 over the past year and is soon to begin production of its successor, the TRS80/4.

Matra Tandy Electronique is the only sector of Matra's information technology division to have worked up a profit — and only a marginal one — for 1982.

An order to develop software for the micro has been signed by a French publishing house Hachette, to promote sales on a reciprocal basis with Le Nordica, a French language press group based in Quebec.

Matra executives explain the

poor performance of the firm's information technology division by the difficulties in switching from an artisan-type level of operation into industrial production. The division's losses last year totalled 10.5 million francs (£9 million).

But the telecommunications division, which made a profit of 888 million francs (£78 million) last year, is doing well from sales of videotex and computer terminals. Following a major sale of terminals to Tynesware in the US, Matra has set up a joint venture with French software firm Telesysteme to market interactive videography systems.

Matra also reports good progress in computer aided design, technology for its Datavision division which raised profits by 350% last year — with 70% from exports — to 37 million francs (£3.3 million).

Customers for Matra's Euclid CAD system include Westinghouse, the US Air Force, Volkswagen and Thyssen in West Germany.

Matra has recently set up a subsidiary in Japan to develop CAD sales there.

This September Matra plans to show a new area network linking micros and a colour version of Euclid at Siccot, France's annual information technology fair.

Labour forces answer on Whitehall projects

by our Parliamentary correspondent

LABOUR MP Alan Woodall last week forced government ministers to report on the progress of Whitehall computerisation and drew a series of written responses.

On the Employment Department, new VDUs could give direct access from local offices to the national computer system run by the DHSS.

Woodall, MP for Hemsworth, requested answers from several different sources on the state of the official administration.

Mr Woodall said an ICL 2966 would replace an ICL 1906A at Darlington shortly.

An ICL M820 was being used to investigate a micro-based implementation of the pensions program.

He predicted Education Department use of word processors and electronic typewriters would grow. Schemes for increasing computerisation were being studied.

The Foreign Office is designing systems to supervise educational interchanges with other countries. A major project for an integrated office system with 1,500 terminals is planned.

Treasury Minister Barney Hayhoe said micros were being introduced into Civil Service Catering Organisation restaurants. The Agricultural Department is also considering replacing its ICL mainframes.

Prime loses six to an Encore

by Howard Karten

PRIME last week lost six high-ranking executives to a neighbouring start-up firm headed by ex-Prime chief executive officer Ken Fisher.

The loss of the six was the latest blow to the Natick, Massachusetts minicomputer manufacturer, which has been hurt recently with declining earnings and a credibility problem among Wall Street analysts.

Prime is widely rumoured to be preparing to report a significant decline in second quarter earnings compared to the previous year, on higher comparative earnings. The predicted decline is the second consecutive one for Prime, whose stock has lately declined on Wall Street and which lately has reportedly been the subject of decision and mirth among Wall Street analysts.

The managers leaving Prime include a vice president of central marketing operations, vice-pres-

ident of Eastern marketing operations, vice-president of support services and other marketing executives.

Ken Fisher, former president and dynamo behind Prime Computer, last week formally announced the start-up of a new computer company, Encore Computer, headquartered in Framingham, Mass., close to Prime, Data General, Stratus, DEC, and others, will start out corporate life with some high-powered business, sales, and technical talent. Key executives include Fisher, under whose leadership Prime's sales grew wildly, and six executives recruited by Fisher from Prime.

They are Henry Burkhardt, a founder of Data General and, most recently, Gordon Bell, former vice-president of engineering and once a force behind DEC's Vax systems.

Encore itself has no plans at this time to develop products on its own. The firm intends to act as a

kind of holding company or consultancy for other, smaller firms which may either have products currently, or which may require assistance in marketing, product development and related areas.

The company is currently capitalised at \$1 million, all of it coming from the company's founders.

Starting management team also includes seven ex-top managers of Prime.

Encore will also be involved in hi-tech via licensing and joint marketing arrangements.

The concept was 18 months in the making. Fisher compared Encore to Gould Inc., an Illinois-based company which has been completely transformed in the past decade or so from its chiefly battery making and selling operation to an umbrella firm for several high tech ventures.

Fisher was also quoted as saying that there were too many micro-electronic products for the available marketing talent to support.

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Last week in Nice, France, Sperry held its annual seminar. This year's theme of Technology and Future Society brought together a wide range of speakers from industry, academia, and government. Some of the highlights of the week's events are reported below

Expert systems are the key to future success

ALVEY Programme head Brian Oakley has singled out expert systems as the key to the UK's success in developing the next generation of computer technology.

Speaking last week at a seminar in Nice, hosted by the Sperry Corp, Oakley admitted that he would not personally have chosen VLSI (very large scale integration) as an area for heavy UK commitment. But, he added, he saw an important role for Innos, whose "transputer" would be interesting to watch.

Oakley's view on the importance of expert systems was backed by the ex-chief scientific advisor at the Ministry of Defence, Sir Ronald Mason.

Mason, who has now taken up a research professorship at Sussex University, said that in the long term he believed the most significant part of information technology would be the expert systems.

Mason suggested that technological advances now offered a major chance to go into reverse in terms of weapons and disarmament because of the role expert systems could play in threat evaluation and resource allocation.

Oakley stressed the importance of the UK being first in introducing commercial expert systems. "Like the database approach, the first firm that writes the rule-book will be in a dominant position," he said.

While the government had lost

some time in accepting the value of unified approach to developing future technologies, Oakley believes that the UK's software expertise bodes well for success.

At the same time Oakley does not underestimate Japan's potential for software advances, and said in some areas their software can already outperform that built in the West. For example, the Fujitsu operating system outperformed the IBM operating system on the Fujitsu-based ICL Atlas which was recently installed at the Scientific and Engineering Research Council in Rutherford.

In addition, "the Japanese know very well where our excellence is, and are willing to buy our brains".

The Japanese, he said, are still keen to get international collaboration going, and formally asked for an agreement with the UK the week before last. The first priority, however, is to get ourselves organised, although a future deal with Japan is not ruled out.

Oakley added networks to the four critical enabling technologies of VLSI, software engineering, intelligent knowledge-based systems, and the man-machine interface that were listed as priorities in the Alvey report.

The lack of emphasis on communications has been cited by many industry leaders as an important omission in the Alvey report. Oakley admitted that it took him a careful second reading of the report before he found the one

paragraph that gave him a "hunting licence for communications".

Other areas, such as storage, could be reconsidered if developments in the market place fell short of expectations.

Progress towards smaller integrated circuit chips will continue, Oakley says, but the laws of a doubling of complexity every year and a reduction by one order of magnitude in the cost of memory every six years would break down soon.

"We are probing up against the limits of technology in integrated circuit plants," Oakley said. "The automated plant could have a heavy pay-off."

It has been the advance in logic units which have made expert systems possible. But there has been limited progress so far in extracting the rules, and Oakley pinpoints it as an area which needs a great deal of attention.

While Oakley says the applications will be virtually limitless, and extend to "mobile" expert systems, he believes the first commercial systems will deal with fairly bounded problems where the danger of error is not catastrophic.

Oakley had a special warning for the UK: the professional trade unions are the most powerful and backward looking, and they are likely to resist the changes forecast by Alvey. He also expressed concern at the growing trend towards nationalism and isolationism, led by the US — a trend

which, he said, should be taken much more seriously.

Oakley finds the question of participation by the multinationals in the Alvey Programme as an "extremely difficult problem. I'm trying like hell to prevent anyone in the Ministry from making any pontifical statements on the project," he said. On some projects, he added, the multinationals could be very important.

The first proposals to be funded by Alvey should be accepted by September. The five-year programme will be funded with £200 million from government and £150 million from industry.

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A tale of Soviet crimes against the state.

Thanks for the memory card — Soviet style

A BIG "megabuck" fraud in the financial system is probably necessary before the world's banks stop "preparing to react" and take positive action, according to Kevin Kearney, assistant manager at the Bank for International Settlements in Basel.

Kearney criticises what he calls "the mad rush to embrace the new technology in order to gain real or perceived competitive advantages without proper regard for the possible consequences".

The move towards a fully electronic payments environment is raising a number of questions concerning privacy, security, and authentication which must be addressed.

Kearney gave the following apocalyptic story to give some flavour of what the future holds: REPORT TO THE POLYBRO ON THE EFFICIENCY OF ELECTRONIC SYSTEMS FOR PAYMENTS.

Comrades: For some time now, the Ministry has been grappling with the growing level of economic crime throughout the Soviet Socialist Republics and our sister socialist country members of Comecon. While crimes of passion are routinely handled with humane punishments taking into account the particular circumstances, economic crimes are crimes against the state and as such are punishable as capital offences.

The one problem in this regard is that we are killing off some of our more enterprising managers, at a rate that is truly alarming in the light of the declining birth rate and the falling attendance at the Harvick School of Business.

As Marx so wisely put it: "There are only two steps to take from being an honest central planner to the firing squad, and those steps are need and opportunity." We at the Ministry cannot control the need. After all we are living in a country peopled with many races, all with a taste for the good life promised to us by Comrade Lenin. As you know, for those "out there" who are not of our inner circle, the only way they can achieve the good life is through economic crime.

You name it Comrades, and they do it. False billing practices, creative accounting techniques

that would bring tears of joy to an Italian bookkeeper's cheeks, phantom inventories, phantom customers, phantom factories and yes, even phantom mines complete with cave-ins and loss of phantom lives, with widow's benefits payable by the state of course. Yes, we admit that we cannot control the need for the good life, but we can clock their opportunity to commit these economic crimes against the state with this memory card and a fully centralised electronic payments system.

If Comrade A wants to fly off to the Crimea with his mistress, he cannot get a seat on Aeroflot or even pay for his ticket in cash because the mere possession of cash will be the ultimate economic crime. There will be no cash, aside from a few low-value rouble coins to use the public facilities in Lenin Squares all over Russia.

Think of it comrades, no more cash, no more underground economy, no black market, no double, triple, quadruple entry bookkeeping. All records of every individual, his authorised purchases, salaries, movements, all controlled by our Ministry's central computer and/or "charged" on to each citizen's memory card.

The beauty of such a system is that we can start office. The French with their quaint telephone system knew what they were doing when they came up with a memory card that did not have to be carried to a central computer every time one wants to use it. The time one can be read at office, at home, at the bank, at the customs posts, travel agents, doctors offices, hospitals, banks, factories, restaurants, etc. The list is endless.

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NEWS ANALYSIS

MSC to arrange revamp for Tops

The Manpower Services Commission admits its training scheme is not successful. John Riley looks at its recommendations for reform

WITH rare candour, the Manpower Services Commission announced last week that its Training Opportunities Scheme, or Tops, computer training record has not been successful and that it is to be revamped to make it more acceptable to industry.

Following widespread criticisms from the computer industry that the Tops computer courses were not producing people it could use, the MSC set up an industry-based review group last November to find out why.

The group released its hard-hitting and candid report last week and among its recommendations are: Tops computer courses to be reshaped and based on standard modules; computer operator and data preparation training to be scrapped; analyst/programming courses to be replaced by a new business computing course; MSC to work out employer-acceptable qualifications for programming; standards of Tops trainers to be closely monitored; and MSC Tops staff to receive computer training.

By these and other measures the MSC hopes to give its Tops computer courses a clear identity on a nationwide basis.

"We hope that this report will improve employers' respect for Tops courses," said MSC's head of computer training, Hugh Sharp, who is keen to get as much feedback and help from the computer industry as possible.

The aim of the scheme is to provide training and retraining for the unemployed and for those wanting to change their jobs. The Tops computer training programme aims at providing basic broad-based training courses, which vary in duration from 10-20 weeks, to enable trainees to gain a foothold in the industry.

Over 3,000 complete computing courses take place each year. The cost of computing training in 1981/82 was £11.6 million.

However, the scheme has not been achieving its aims. In 1981/82 the proportion of trainees who had gained jobs in computing within three months of completing Tops computer courses was 43%. That is a continuation of a steady decline from 79% in 1979/80 and 57% in 1980/81.

A breakdown of the placement figures according to computing skill and geographical location is presented in the report. The five main skills covered are programming, systems analysis, analyst/programming, computer operating and data preparation. Placements in each category were down (see table).

Although fewer trainees programmers found jobs in 1981/82 than in 1980/81 overall, Wales had a 9% increase and the South-east had a 2% increase.

The Tops trainees with the best chance of getting jobs were those who trained on systems analyst courses in the South-east, where 81% were successful. However, even this was down on the previous year's 94%.

Although placement for analyst/programmers fell from 70% to 57% between 1980/81 and 1981/82, it was still higher than for

programmers and systems analysts.

Trainee computer operators and data preparation staff are suffering from fewer job opportunities due to technological changes. The result was that only around a quarter of computer operator trainees found jobs.

The Tops programme is judged on how many trainees got jobs, and the report does not pass the buck on to the recession and the postponement of many large computer projects. Despite these, it says, "the placement rate from Tops computing courses should have been higher than it was".

Put simply, the job gives have not thought much of Tops. The report is open about this: "Employers of computer staff have been highly critical of most aspects of Tops — the calibre of trainees, the content of training, the expertise of trainers, the means used to assess trainees' abilities and the way in which trainees have been 'sold' to them."

Last December, in response to these criticisms, Sharp put out a general call for as many comments on the Tops programme as he could get from the computer industry and others. When those criticisms were analysed by the review body, they were found to contradict each other.

"For every criticism of a particular aspect of the scheme, somebody else would identify that aspect as a strong point," says the report. It thinks the problem is that computing is too young to have any perceived training system or standards.

"The MSC is seeking to commission training from a system which is too fragmented in its approach to selection of trainees, content of training, assessment of training achievement and standards applied by training providers to carry conviction with employers."

The content of the Tops training was given top priority for standardising. "From the employers' standpoint, the lack of coherence in course content and length makes it virtually impossible to perceive a Tops trained product as such," states the report.

To give the programme coherence, the review body decided that all mainstream Tops computing courses should "contain a common core of modules which all trainees are required to take".

The report gives details of sample courses and Sharp is welcoming opinions from employers. Tops courses for computer operators and data preparation staff are to be scrapped, while the Tops systems analysis course, which is based on the National Computer Centre's basic course, will remain much the same.

Tops programming courses will in future include a greater emphasis on understanding business systems and of overall systems environment. The report comes down in favour of having a single programming course that would fit trainees for either a mainframe or small computer environment.

The analyst/programming course has been redesigned and

will be called "business computing". It will cover designing and developing software packages, implementing them, designing small systems, simple programming and operating.

The MSC will also lay down minimum criteria for trainers and inspect them regularly to make sure they are up to scratch. Training is currently carried out by computer companies, including Control Data, ICL and Systime, by computer training colleges, and by further education colleges.

The MSC also wants to make sure that people who have completed training have certificates that are recognised industry-wide. It is setting up negotiations with the NCC to do that.

The MSC is also setting up standardised aptitude tests and



The aim of the Tops scheme is to give trainees a foothold in industry.

selection processes to ensure a high calibre of trainee. Sharp said that the drop-out rate on courses was about 10-12% and, although some left to take up jobs, it looked as if trainees were taking on poor quality people.

"That surprises me," he said. "I would have expected them to pitch their standards higher, as they are only creating a rod for their own backs if trainees drop out as we want to know why."

Sharp intends to move quickly. His first move will be to send out copies of sample courses for comment; to set up discussions with the NCC and other bodies to develop certificated standards; and to sort out trainee selection.

■ Leader Comment — page 13.

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Silicon Valley goes stale

by Andrew Thomas
US CHIP manufacturers are paying the price for being first. Problems with their ageing installations have led to pollution scares in Silicon Valley.

Fairchild, which set up one of the first manufacturing plants, is on the receiving end of a number of law suits from citizens blaming the firm for polluting water supplies. And a three-month investigation by a Californian newspaper has concluded that drinking water in the valley is threatened by dangerous contamination from chip manufacturers. Chemicals, including arsenic and phosphorus, have found their way through the soil to contaminate drinking water supplies in over 50 locations. Nine wells have already been closed as a result. Spokesmen for two UK chip builders maintain that they have never had any problems with toxic waste, and blame the age of the US plants for some of the problems. "A lot of the Valley plant is pretty old," said one, "and some of it dates back to the '50s and '60s. Their purification systems haven't been brought up to date, and they don't put their waste into the sewers, they store it in separation tanks."

"The area is known for its tendency to earth tremors, and it is quite possible that some of these tanks have been fractured, allowing the chemical waste to escape."

And it looks as if there may be a mass exodus from Silicon Valley in the offing. Apple has announced plans to set up a rival operation 35 kilometres away in Coyote Valley, and IBM, Tandem and Verbatim are also tipped to make the move.

One US congressman, Ed Zschau, is worried that the place where it all started may be abandoned, and is seeking \$32 million to build a museum to mark the innovations made there. If successful, his scheme will take three years to plan and five to execute.

Orb becomes a Science Museum piece

by John Riley
THE Orb microcomputer, launched only last month, is about to become a museum piece. It will feature in a permanent exhibition at the Science Museum which is opening at the end of August.

The Orb, which is manufactured in Brighton by ABS Computers, has a round VDU and comes in bright colours. Those features will act as an eye-catcher to attract visitors to the permanent display on environmental science and office ergonomics which is sponsored by the Chartered Institution of Building Services. "We are delighted that we were asked to provide the Orb," said Bernard O'Leary, ABS Computers commercial manager. "It will be in the Science Museum on permanent enclosed exhibition for a 10 year period, and will be working with things up on the screen. Since the Orb was launched last month, O'Leary claims that over 200 orders have been taken."

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Chip drought hits systems builders

THE surge in demand for semiconductor products components has brought price rises which are welcome to the recession-pressed chip makers. But to the computer builders it has brought with it the prospect of rationing, particularly for memories.

The parts most affected, with lead times stretching out to more than six months, are medium-fast 64 Kbit dynamic RAMs, the staple chip now for many computer builders. Large volume orders placed now are unlikely to be delivered before next year from most sources, unless the buyer has a very close relationship with the chip supplier.

And the 64K parts are not alone. The previous generation of such memory chips, 16K dynamic RAMs, are moving to higher prices and longer lead times too, at a time when many manufacturers have stopped making them and turned to 64K chips. Static RAMs and Eproms face the same trends, as do the most popular processors, the 280 and the 80386/8086.

The chip manufacturers will

soon be putting certain parts on allocation - rationing customers to particular quantities - and equipment manufacturers which are not locked securely in to supply arrangements with chip makers will find it increasingly difficult and expensive to obtain adequate supplies.

Newcomers to the band of computer builders will inevitably suffer more than established manufacturers with secure long-term arrangements with the chip suppliers. Some observers reckon there is an element of over-reaction, with customers scrambling to get deliveries, and that things will settle down again.

But equipment manufacturers wanting to cash in on the expected boom in personal computer sales this Christmas will find that many of the chips needed are scarce and expensive on the spot market.

US semiconductor manufacturers reduced chip-making capacity during the recession, with many closing down lines and laying off staff. Now that demand has picked up again the companies are building up capacity, but cautiously.

Meanwhile Japanese manufacturers are boosting their investment in plant and equipment. This financial year the top nine companies there spent over a quarter as much again as they did last year on plant and equipment, and are trying to dominate the next phase of the dynamic RAM market - 256K devices - as thoroughly as they do the present 64K market.

Part of the reason for the shortage of 64K chips is said to be deliberate action by the Japanese suppliers to serve their domestic equipment manufacturers by restricting the volume of chips available for export.

Major Japanese companies, including Hitachi, NEC, Toshiba and Fujitsu, have chip factories in the US to serve the market there, plus others in Europe - like the NEC plant opened this month by the Queen.

Now Mitsubishi Electric, which exports around 15% of its 64K DRams to the US, is to set up a factory in North Carolina with a starting capital of \$13.5 million. Production is scheduled to start in January 1985.

Chinese show faith in Future

by George Black
FUTURE COMPUTERS, the Surrey firm which produces the IBM PC lookalike, has signed a £2 million deal to sell its machines behind the Bamboo Curtain.

Hundreds of its micros could soon be on their way to the People's Republic of China, potentially the world's biggest market. And if the volumes and economics are right, the company will consider local manufacture in the Far East.

The deal is the result of a recent contract with General Robotics of Hartford, Wisconsin, which has already sold several million dollars worth of high technology to the Chinese. General Robotics set up contact for Future Computers with the People's Republic, which now deals directly, said a Future Computers spokesman.

General Robotics has made half a dozen sales to the Chinese government of systems based on DEC LSI-11/23s. The US systems house uses disc drives from British companies Rodime and Newbury Data in its systems and acts as exclusive agent for these firms in China. It was offered a number of contracts involving smaller machines and chose Future for the purpose.

According to General Robotics' chairman Carl Pick the two firms are now collaborating on development of a DEC-compatible desktop computer similar to the IBM-compatible micro. It is due for launch this autumn.

Future's managing director Brian Jackson describes the £1,800 FX20 as an IBM thinkalike rather than a lookalike. Running under either Digital Research's Concurrent CP/M-86 operating system or Microsoft's MS-DOS, it includes 128K of memory and 1.6 megabytes of floppy disc storage. Strongest selling point of the machine, besides the low price, is likely to be its ability to run the growing number of programs for the IBM-PC.

Pick said in Wisconsin that they had modified the performance of some of the hardware sent to China to get it into a non-restricted category for export. With slightly lower performance kit they were able to escape the nine-month queue for approval by the US authorities.



ALLIN... TeleVideo is moving away from general purpose kit.

TeleVideo, GCS bid for 3270 market

by John Riley
MAJOR VDU manufacturers TeleVideo Systems International and protocol converter supplier GCS Communications have joined forces to tackle the IBM 3270 marketplace.

Following the recent announcement of a joint marketing programme, both companies are developing a new range of terminals compatible with 3270 networks. The first of these, the 9178 Model 1 terminal, based on the TeleVideo 915, was launched last week.

The 9178 Model 1 terminal has a GCS Communications Series II cluster controller which emulates or replaces either a IBM 3271 (BSC) or an IBM 3274 (SNA) controller. The companies claim that it offers features similar to those of an IBM 3178/3278 and that at £745 it is 36% cheaper than the IBM 3178 C2 equivalent.

This is the first time that TeleVideo has moved away from its policy of building general purpose products to designing termi-

nals for specific mainframes. "In current programme, with GCS Communications providing IBM compatible products, is typical, the approach TeleVideo will adopt," said Peter Allin, TeleVideo's director of European sales.

TeleVideo now claims to be the world's largest independent manufacturer of video terminals with current production running at 11,000 units each month. "We're looking for GCS Communications to become a highly significant OEM customer," said Allin. He jointly developed terminals expected to be announced soon.

GCS Communications also announced its new Series II 910 converter, which is a communications controller suitable for remote job entry batch type applications within an SNA environment.

Starting price for a two port device is £3,324 with cheaper rates for volume sales. It takes up to eight peripheral devices and can be asynchronous devices as well as line printers as well as terminals acting as consoles.

Hoskyns opens shop

by John Kavanagh
THE Hoskyns services group is aiming to do 10% of its £30 million business in the personal computer market this year following the opening of a demonstration and sales centre in central London. Other centres will open in Birmingham and Manchester by Christmas.

Hoskyns specialises in building systems around Digital Equipment minicomputers and is initially offering DEC microcomputers and the Apple Lisa. An IBM Personal Computer dealership will be announced in the next two months.

First-time users are expected to account for 20% of the company's personal computer business but the main markets are expected to be among its existing customers. Hoskyns will offer advice to medium and large customers considering microcomputers for end users or building networks.

"Many of these people are inhibited when they go to a retailer," said marketing director Richard Holway. "They can now come to us for demonstration and advice without commitment."

Hoskyns has adapted all its business packages to run on DEC personal computers.



HOLWAY... Aiming at £3 million.

"Micro customers can get the same sales ledger as the big mini by some of the company's leading companies," said Holway. "They pay more - but they don't have the restrictions of a mini package."

Holway said systems houses had made "some pretty hard decisions" about personal computers in the next few months.

"Micros are not vital to our survival but if we're going to share in the growth of the market we must have a stake in the fastest growing part."

Siemens keeps out of micros

by Nuala Moran
WEST Germany's largest electrical company, Siemens, will not be entering the German personal computer market with complete systems because it lacks marketing operations for a strong push in consumer markets.

This statement was made by Karlheinz Kasse, Siemens' chairman. He also said that he knows of no other West German electronics or computer firm that intends to compete against low priced micros

hitting the German market from Japan and the US.

Kasse said that Siemens will restrict itself to supplying components for personal computers, continue to concentrate on the market for more sophisticated middle range models.

Siemens is forecast to have an increase in profits for 1983. According to Kasse, Siemens' profit margin for the first nine months of 1983 was 1.9% up on 1.7% in the previous year.

SOFTWARE FILE

Giro enthuses about Maestro

NATIONAL Girobank is enthusiastic about the programming aid Maestro which has been undergoing trials at its Bootle centre.

The Giro people are midway through a six-month evaluation session to test the promise by distributor Philips Business Systems that it will boost their productivity by at least 10%.

The £90,000 contract has a buy-back clause if the software fails to meet that condition, but as Ursula Leahy, Girobank's technical standards manager, observed, Girobank would be looking for far greater improvements if it were to make a long-term investment in the product.

"Maestro is a Marks and Spencer's solution," she said. "In other words it's very good, but a bit expensive. What we've got to decide is exactly how much we can use it. It seems to have lots of potential."

Maestro, written by the German company Softlab, was adopted

first in this country by BP Oil, whose data processing manager Ron Cowie attested to its value at a seminar in London in April. He told delegates to a BIS Applied Systems conference, including a Girobank representative, how Maestro had helped his firm tackle a programming bottleneck.

"One of its attractive features," Leahy commented, "is how it lets you browse through listings. This means we are getting far fewer listings output from the printer, which is really very good. We're moving towards the paperless office, though we've been the last to take our own medicine in this respect."

Girobank began as a batch operation in 1968, converting to online systems in 1975, but still only has 12 terminals among its 230 systems development staff.

One aim of the current trials is to find out how many more terminals would be useful. Leahy

guesses as many as 72. The bank looked at alternative methods such as Unix and Delta before embarking on Maestro. Leahy said Girobank had seemed to offer the greatest flexibility, shifting the strain from its four ICL 2900s on to a Philips P7000 mini.

The bank's DP department ran into problems last year when the 2900s which replaced an ICL System 4 became heavily overloaded and on top of this came a dispute over maintenance which involved up to 10-day delays on input for some of the bank's 1.2 million customers.

Now it is undergoing a "major reorganisation of its computer facilities". First step has been the addition of a Tandem mini to assist the 2900s.

The future of the ICL machines is in doubt as the bank goes to open tender on upgrading the establishment.



GIRO... Midway through a happy Maestro evaluation.

BIS buys Cross and creates new division

BUSINESS Intelligence Services (BIS), the £23 million turnover British systems house, has bought 80% of re-insurance specialists Cross Computer Group and Cross Computer Management.

The Cross companies have been in the re-insurance field for 14 years and have installed 27 systems based on their Solar software in the Middle East, Europe, Africa and North America.

BIS, most famous for its Midas banking system, also has interests in the re-insurance area with its Folio package running on IBM System 38 machines.

Solar is an online and real time system handling underwriting and accounting operations. Group founder Peter Cross said the new agreement would enable it to expand its activities which it had been unable to do for lack of capital. BIS recently reported record annual results, with the pre-tax profit of £2.7 million.

The takeover results in the birth of a new division to be known as BIS Solar.

Inmos sets its heart on Occam

INMOS, the state-backed chip maker whose future has been the subject of recent speculation and controversy, is pushing ahead with plans to sell its programming language Occam.

An evaluation kit for the language has been bought by several hundred software development organisations round the world since its release last December.

Now Occam moves from the experimental stage towards the marketplace with a set of tools to be called the Occam Programming System, providing support for real time systems design.

"We've created a set of engineering tools and shored them into our workstation," said a company spokesman in Bristol. The workstation to be offered is a modified Sirius micro, with a keyboard tailored to allow single key commands.

The system is already implemented on Intel 8086 chip-based micros and on DEC's Vax supermini running under the VS operating system.

A Motorola 68000 version is due in the fourth quarter of this year



HOARE... His brainchild.

and Inmos hopes to see it working on its enigmatic Transputer hardware "some time during 1984".

Occam was the brainchild of Professor Tony Hoare, director of research at Oxford University, and Inmos's David May.

It is based on the principle of concurrent rather than sequential operations which Inmos says is vital for the fifth generation of computers. The language has been exciting a lot of interest in Japan.

The arrival of the toolkit could help to bring Occam from the academic world into the commercial world.

MicroPro broadens its Stars

MICROPRO, the Wordstar author, has widened its business software range with Planstar, a financial planning and reporting system to run alongside its other Star products. It is designed for the IBM-PC under the PC-DOS operating system or any CPM based micro and will be available through the US firm's British distributors and dealers.

Prime deal

US MINI maker Prime is to sell process planning software written by Logan Associates of Henley-on-Thames. The Locam system will be marketed worldwide by Prime. It is already used by Dowty, United Glass and the US General Electric. CAD/CAM-dedicated Logan is 45% owned by ICFP venture capital bank.

Software File is compiled by George Black

Libra ascends

MBS MICROTUX of Eton is marketing an accounting package based on Microsoft's Xenix operating system to run on the American Altos range of 16-bit microcomputers. It is called Libra.

Acorn languages

ACORNSOFT has put three new languages, BCPL, Lisp and Forth, on to its BBC micro. BCPL is a high level alternative to Assembler suitable for producing screen editors, control systems and commercial packages. Lisp is a basis for artificial intelligence writing and Forth a small and fast system language.

Appgen deal

IDM of Doncaster has signed an exclusive deal with Software Express of Texas to distribute its Appgen tool in the UK and Europe. The agreement was reached during a recent visit by Express's Bill Adams to see IDM managing director Neil Rajcliff. Appgen is a bridge between Pick and Unix operating systems.

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Alpha users get leg up to mini world

by Philip Hunter
USERS of Alpha Micro systems now have an upgrade path into the minicomputer world with three new 6800-based machines offering up to four Mbytes main memory. At the same time the company is boosting its support to its UK dealers with a new sales and service centre in Slough, with another to follow in Brussels to serve the European market later this year.

Also announced is a multi-terminal word processing system for the company's whole AM-100 range of super micros.

The company hopes to spur forward after six years of steady but unspectacular growth, and triple turnover in the next two years to \$100 million. Leonard Palladino, sales vice president, thinks that this large target can be partly achieved simply by building more machines and waiting for the ord-

ers to come in. "We could increase our sales by a third by just increasing our supply to existing buyers," he enthuses.

Palladino hopes that the remaining growth will come by snatching would-be buyers of traditional minis like the Digital Equipment Vax, and by selling more peripherals. "Before we did not offer to the marketplace much more than a CPU," says Palladino. "We used not to see revenues on peripherals. Now we are offering them."

All micros in the AM-1000 range run the same AMOS operating system, which with multi-tasking the company can claim with some justification comes into the minicomputer class. CPM is also available, as well as the high level languages Basic, Fortran and shortly Cobol.

Micro News is compiled by Robert Parry

Hambro Life: the IBM enthusiast

COMPUTERISE early and you can save a lot of time debugging, fudging and patching. Hambro Life, one of the UK's youngest and most exciting financial institutions, has applied this philosophy since its birth in 1971.

"We always gear the timing of a new product to the time the computer system is ready and working," says deputy systems manager Geoff Fletcher.

But, there is a danger that this approach will impose the limitations of the computer system upon what can be offered to the customer, admits executive director of management services Lawrence Churchill.

Quick to reply to this potential self-criticism, Churchill continues: "But you can gain by identifying the issues early on. If something can't fit into the existing system, build changes into it."

Hambro is the UK's largest specialist in unit-linked life assurance, rather than the more conservative option of endowment assurance. Under a unit-linked policy, the investor's cash is sunk in a fund, or several funds, which are used to buy shares in companies.

This makes the investment more dynamic than endowments, with a better chance of beating inflation. But there is also the danger of falling worse than under an endowment policy, which offers a guaranteed rate of return, calculated retrospectively when the policy is surrendered.

The company is capitalised at £400 million, and its computer system has to cope with a flow of one million premiums a day, as well as 1,000 new policy applications.

Unlike some of its competitors, only about 15% of the company's sales are made through insurance brokers. Hambro was therefore able to make a tough stand last year when some insurance companies rocked the established order by offering brokers bigger commissions to peddle their policies. Steadfastly, Hambro refused to give the brokers an extra per cent.

The bulk of Hambro policies are sold by 3,000 self-employed salesmen, who work entirely on commission. Only Abbey Life among the competition has such a large sales force.

Hambro's salesmen earned an average £12,000 each last year, a few as much as £100,000. But Churchill is quick to point out that the top salesmen probably have to pay a personal assistant, an office manager and buy a computer out of their enormous salary.

The company is busy now giving its salesmen micros for their own record keeping, although there is no plan to link salesmen up to the central IBM computers. Nor is there going to be a change to online updating of the databases—the risks of data corruption are too great.

In fact the company is slow to bring new technology on board, being content to let others break in new hardware. The company does however regard itself as an innovator in computer applications, and claims it was one of the first to computerise the complex calculations of insurance policy surrender values in the early 1970s.

Hambro provides a classic advertisement for IBM, lashing faith and praise on the computer industry giant. It relies on IBM to maintain compatibility between different hardware, including the Personal Computers, which it is thinking of giving to salesmen instead of the present choice, the Sirius micro.

"IBM has thought through its long term strategy for large companies, especially in the financial community," enthuses Churchill.

Last year Hambro implemented a sophisticated database system with online enquiry. The base can be interrogated under four headings: policies, clients, selling agent, and details of the contract.

Development of this new base was costly — 250 man years valued at £7 million.

Previously the company had used a home-grown tangle of files, known colloquially as Phase 2. "It was becoming inflexible," explains systems manager Ian Seward. "We had to improve the speed of reaction."

There are over 200 programmers and analysts at Hambro. The company believes that there is a limit to the number of good systems people that can be grown at home. "You probably won't find the best analyst in the UK in the motor insurance claims department," says Fletcher. Certainly not in Hambro's case because there is no motor insurance claims department.

Hambro says it has overcome the shortage of crack systems people by joining the top 10% of salary payers. A good systems person with five years' experience will earn £13,500 plus car. A senior systems analyst will earn £15,000 plus private petrol as well as the car. Who says that perks are dying?

The classical discrimination between programmers and analysts is not to be found at Hambro. Programmers start at £6,800, rising to £10,500 after two and a half years.

The company is now expanding into other financial markets. It recently brought out Allied Hambro, allowing unit trust policies to be offered. Also acquired was the private London bank, Dunlop, which actor Sean Connery is a major shareholder. This move, some of the cord linking the company with its parent Hambro merchant bank.

Hambro has also forged a link with the Guardian Royal Exchange, which offers more insurance policies like motor house.



STEGGALL... Happy with Hambro's £20,000 perk-laden package.

There is scope in the programming department to climb to £20,000 plus car and petrol, the package enjoyed by programming manager Peter Steggall. No wonder that the company boasts a low turnover among staff and a high job satisfaction.

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PEOPLE



IBM board member elected

Alex Henderson (above) has been elected to the board of IBM United Kingdom as telecommunications director. He joined IBM in November 1964 as a data processing salesman. His management appointments have included DP branch manager, director of international centres, and DP marketing staff manager. In his current position he is responsible for the marketing of IBM's telecommunications products and services in the UK.

Chris Lusby Taylor has been appointed principal support consultant at Digital Research. He was previously technical support specialist at Intel Corporation (UK).

DIARY

AUGUST 5, 12, 19, 26

Practical Wordprocessing is a user training course held at the Barton Grove Micro School, Warrington. Other courses in August cover wordprocessing theory and practice, electronic book-keeping, building and using an integrated system and building and using a database. Details: Training manager, Warrington 36642.

AUGUST 8-11

Practical Computer Auditing for business and systems analysts is organised by Control Data. It will take place at Control Data Institute, London. Cost is £445. Details from Sylvia Lyons, 01-240 3400.

AUGUST 8-12

Introduction to Organisation and Methods is designed for those involved in administration or management who need to review current systems. It takes place at the Henry VIII Hotel, London. Course places at £510 may be booked through the course registrar, Cherry Bigmore, on 01-261 9237.

AUGUST 16

Data Communications Overview at the Control Data Institute, London, gives an introduction to modern communications systems. Organised by Control Data, it costs £145. Details from Sylvia Lyons, 01-240 3400.

AUGUST 30-SEPTEMBER 2

The second International Conference on Database, organised by the British Computer Society and universities of Aberdeen and Cambridge, takes place at Churchill College, Cambridge. Details: Peter Hammersley, Middlesex Polytechnic, London N11 2NQ.

AUGUST 31-SEPTEMBER 1

Improving Programmer Productivity is a practical workshop for trainee programmers with basic language training and initial experience. Run by BIS Applied Systems, it is to be held at the Park Court Hotel, London, and costs £270. Details: Cherry Bigmore, 01-261 9237.

SEPTEMBER 5-8

IBM Cobol Review, a course organised by Altergo Education, takes place in London. Aimed at inexperienced Cobol programmers, it costs £450. Details: Altergo Education, 01-836 9303.

SEPTEMBER 7-9

Implementing and Operating Local Area Networks is a seminar organised by Frost and Sullivan. Taking place at the Mount Royal Hotel, London, it costs £425. Details: Carolyn Budd, 01-486 0334.

SEPTEMBER 12-15

Advanced IBM Cobol is an Altergo course for programmers with at least 12 months' Cobol experience. To be held in London, it costs £450. Details: Altergo Education, 01-836 9303.

Cyril Townsend has been appointed chairman of Centre-file, the computer bureau subsidiary of National Westminster Bank. A former managing director of Centre-file, he succeeds Tom McMillan, who has retired as a director of the bank and as deputy chairman of Lombard North Central, NatWest's instalment credit and leasing subsidiary.

Bill Smith has been appointed commercial director of Mellorata and has acquired a shareholding in the company. His appointment to the board is in addition to his present duties as general manager and he will continue to be responsible for the day-to-day running of the company. Smith joined Mellorata in 1981 as financial controller.

Trident Computer Services Group, the Farnborough-based contract staff and computer maintenance consultant, has appointed Bob Mitchell (below) as financial director, six months after he joined the company. In December 1982 he was made financial director/designate, after carrying out an audit for Trident's 1981 successful flotation when he worked for an accountancy firm.

Peatree Software International has appointed Ronald MacKay to the position of software support consultant. His previous experience includes the position of senior systems analyst at Rank Xerox (UK) as well as six years with the Scottish Office Computer Service in the post of systems analyst.

Delta Data Systems Limited has promoted Ian Davies, whose sales area covers Wales, West Midlands and North of England, to senior sales executive to head a new sales team. He joined Delta Data Systems in 1981.

Sinclair Research has appointed Charles Cotton as overseas business manager and Ronald Cohen as a non-executive director. Cotton joins Sinclair from British Leyland, where he has worked for 12 years, most recently as overseas operations director for Leyland Trucks. Cohen is the managing director of both MMG, the investment banking services group of which he was a founder in 1982, and of Alan Parfitt Associates, its venture capital arm.

Senior appointments have been made by Standard Telephones and Cables in two of its management companies. John G. Cottrell (above) is to be the new managing director of STC Telecommunications. He leaves his post of managing director of STC Communications International, but remains a director. He also continues on the boards of Standard Telecommunication Laboratories and IAL. James P. Uttersson, deputy chairman and managing director of IAL, is to replace Cottrell as managing director of STC Communications International. He also takes over the chairmanship of IAL.

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The great ACT hot hike

ACT picked one of the hottest days of the year to move a five ton mass of ICL computer equipment from its Birmingham to its Bristol premises. And not a hitch was there to report.

Indeed the hardware was back on the air ahead of schedule.

The only aggravation in the heat was from a few unlucky souls whose cars were trapped as police cordoned off the street in Bristol. This was necessary since the computers were too big to be brought in through the front door of the Bristol building, and so had to be hoisted up through a fourth floor window by crane.

The move was immaculate in its careful coordination of customers, staff, ICL engineers and local police.

It began at eight o'clock in the morning when a team of ICL engineers entered the Birmingham building to disconnect equipment including an ICL 2950, two 3-ton line printers, disc drives and other peripherals.

Meanwhile the cabling under the false floor was rushed ahead of the main removal van to be laid in wait for the hardware in Bristol.

After the hoisting up into the new computer room, which took three hours, it was back to your trusty ICL engineers to remake the jigsaw of computer pieces as before.

Tony Brin, managing director of ACT's bureau, was full of praise for the ICL team's efficient handling of the operation, and gave them a slap up feast afterwards for their day and night labours.

Both computers—the one moved and the one already resident in Bristol—were running normally again by six o'clock on Sunday evening.

ACT had decided to move the hardware down from the Midlands to offer a more resilient service in Bristol with one computer taking over from another if it fails.

The company has taken on five extra staff at Bristol to cope with the extra work.



ACT... Pulling its hardware together.

Digicomp puts Ada on a micro

A US company is aiming to super-critics of Ada who say that the language is far too big and unwieldy in its full form to be accommodated on micros. Digicomp Research has announced that its Delphi-100 supermicro can run Western Digital's STC-Ada compiler, as well as a range of software development tools.

Just one little snag: neither the compiler, nor the micro is available yet in the UK. But Digicomp sales manager Jeffrey Cox says that his company is negotiating for the use of Western Digital's European sales outlets to market the Delphi micro with the Ada compiler.

"Western Digital needs our hardware," says Cox. And Digicomp certainly needs Western Digital's Ada compiler, which looks certain to be the first to reach the full ANSI standard established February 1983.

The full Ada is certainly a large language, and Digicomp will be using Western Digital's 16-bit Microengine chipset to execute the code produced by the compiler. There will later be the option of upgrading to the Motorola 68000 chip which has 24 bit address lines and will enable larger programs to be run.

For the record book, the first Ada compiler to be validated by ANSI, the American National Standards Institute, was one developed at New York University. But this is really only for show, and is not capable of running serious programs because it is painfully slow. It was merely an academic exercise to help produce a formal definition of the language.

Western Digital's compiler produces Pascal p-codes which execute much faster.

The compiler has already completed a successful dummy run using the test suites of the US Department of Defence. Formal approval from ANSI should follow.

Workplace is compiled by Philip Hunter



Two cheers for engineers

SOFTWARE engineers have plenty to cheer about these days. Well, two things anyway—their pay and their status.

You may not know just who they are, but no less august and austere a body than the Institute of Electrical Engineers has offered them membership. And now we hear that their salaries have risen by 25% in the last three months. Experienced job seekers in this market can name their price, according to a survey by a London contract staff agency.

Other estimates of the salary rise are not quite so dramatic, but figures of between 10% and 20% are commonly mooted. At the same time salaries for junior programmers have been almost frozen for the last two years, certainly lagging a little behind inflation.

A result of this is that salary differentials have increased. Junior programmers usually earn between £6,000 and £8,000, while a senior systems analyst can expect double this, as well as a company car.

According to Electronic Ap-

pointments, the agency conducted the survey, although they had more confidence in the results. Encouraged by the results of the survey, the agency has set up a new permanent recruitment section.

"We find most people estimate themselves, which is a bit of a pity," says the agency's managing director, John Epsie. "They may be wrong about asking for the right price, but we will negotiate it for them."

THESE two multiplications show how the 10 digits from 0 to 9 may be arranged in two groups of five, so as to give not only the product, but also the multiplier one possible. This week's puzzle gives the largest possible number product. Hint: Both these numbers have a two figure multiplier. See page 55 for the solution.

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David Broad, chairman of Comart and the British Micro Manufacturers Group, writes about . . .

What the UK micro makers want from Ken and Maggie

THE BMMG (British Microcomputer Manufacturers Group) was formed over two and a half years ago by concerned managing directors of British microcomputer manufacturing companies.

The meeting was prompted by the first ever appointment of a Minister for Industry and Information Technology, Kenneth Baker, and a meeting had been arranged to ensure the DoI was made aware of key policies that could affect the future of this very important sector of British industry.

Further to this meeting, arrangements were also made for representative discussions with the CCTA (Central Computer and Telecommunications Agency), the NCC (National Computing Centre) and other bodies having effect on the national strategy for microcomputers.

From the outset the participating manufacturers were determined that the BMMG should not either become merely a talking shop or a bureaucratic trade association far removed from the day to day topics of strategic interest. Representation was very much by the chief executives of the micro manufacturers concerned.

Following the announcement of the original preferred microcomputer list by the CCTA, many more manufacturers were in contact with the group expressing dissatisfaction with the very small number of UK suppliers included on that list.

The initial manufacturers participating in the BMMG particularly concentrated on business microcomputers in the price ranges £2,000 to £5,000 but it was soon agreed that the brief should be widened to include all UK manufacturers and also to include all applications.

It was not long, therefore, before the number of companies in the group had approached 20 and decisions taken to commission professional assistance for the secretarial services of the group.

Today the enlarged council of the BMMG has members specifically responsible for initiatives in the field of exports, standardisation, commercial policies and tariff duties, and also the important responsibility of reviewing the suitability of new members to join the group.

Present policies of the group are targeted at achieving progress in the following specific areas:

Unfair duty rates: For many years, executives in the computer and electronics industries have drawn attention to the inequities of the system whereby the duty rates vary on components and assembled microcomputers, which has the direct effect of discouraging the manufacture of microcomputers in the United Kingdom.

Representations have been made in the past by individual companies but the BMMG has adopted, as a top priority, the task of ensuring that some changes are made.

The difficulty has been that duty rates span several ministerial and departmental areas, from the standpoint of their impact on industry policy, finance and trade. It was therefore important to set up an initiative that was involved in extensive liaison with government on the one hand and ensuring that the widest possible measure of industry support was achieved on the other.

BMMG vice chairman Nigel Smith has been quoted in many industry journals as demanding urgent action in this field and it was therefore possible for the

BMMG to arrange the largest ever number of manufacturers to visit the Department of Industry in June to demand early representations to the European Economic Community to enforce a change.

Unfortunately arrangements for the General Election have intervened but with the government now returned, early meetings are planned with Kenneth Baker in his new role within the combined Departments of Industry and Trade. How government can be our best customer: The BMMG has been in close contact from its outset with government departments and the procurement agency, CCTA, that is responsible for purchasing microcomputers in the United Kingdom.

In its first year a very successful seminar was organised in conjunction with the NCC and the Department of Industry that, for the first time, brought before many senior members of the Civil Service, papers that identified exactly how UK microcomputers could be used with good effect to improve efficiency, while providing considerable potential to the UK micro manufacturers themselves.

The BMMG is pleased that in the latest list of announced microcomputers for preferred government purchase, seven of the 12 manufacturers are now, not only manufacturing micros in the UK, but are owned and managed by UK executives.

But we have been pleased to agree with the CCTA a basis upon which systems not on the list may still be proposed, in circumstances where significant cost savings can be achieved or the specifications and applications of the system are particularly suited.

The government marketplace for micros has been drastically under-exploited in the UK over the last seven years of the microcomputer revolution.

For a sector which represents over 50% of the gross national product and spending power, the 3% or so of manufacturers' business that is represented by government is really appallingly low.

There is an urgent need for manufacturers and government, together, to work in constant campaigns of awareness and constructive proposal to ensure that the implementation of new technology throughout the government sector is vastly improved.

The BMMG is pleased that many large microcomputer schemes, including the DHSS, could now make a favourable impact in future. It is particularly important that UK microcomputers are selected for these applications.

Government is rightly concerned from the point of view of security, and also future service and support of its administrative systems, that manufacturers are able to provide this continued service.

There is no better way of ensuring accountability for manufacturers than for their operations to be based in the UK, where lines of communication are short, and where there is a joint resolve to both develop and optimise systems to be even more suited for public sector applications.

Working with others: The BMMG has always co-operated actively with other trade associations and representative bodies, to ensure that matters of common interest are pursued as far as possible. The BMMG has held joint events with the Computing Services Association (CSA), the trade association more particularly concerned with



"There is an urgent need for manufacturers and government, together, to work in constant campaigns of awareness and constructive proposal to ensure that the implementation of new technology throughout the government sector is vastly improved."

the supply of software and services to the computer industry, and also with the CBI (Confederation of British Industry), where CBI Director General, Terry Beckett, has supported the BMMG's Five Point Plan.

Reports by both the Electronics and Information Technology EDCA of NEDC, emphasise the importance of the trade association in providing consistent input to government to improve the quality of decision-making for the future. Membership and representation: The BMMG has seriously considered the structure and representation of the group, from the standpoint of ensuring that it truly represents British microcomputer manufacturers.

Of course, in many instances it can be difficult to establish to what extent a microcomputer is manufactured and designed in the United Kingdom, but the policy that has been used throughout is one of admitting companies who not only manufacture computers in the UK but are also owned and controlled in the UK.

The BMMG recognises that in order to remain representative and to support a degree of membership

necessary to finance high levels of group activity, we should not be restrictive on membership.

Early policies, for instance, insisted that all member companies had been trading for three years and were in a position to disclose accounts accordingly. Now many more recent and smaller companies have entered the market, many financed by large amounts of start-up capital, these policies have been rethought and the BMMG is increasing its membership and encouraging other organisations to join.

A roof over our heads: One of the problems that has long faced high technology companies is the gross inadequacy of suitable accommodation.

The classical industrial building is designed for organisations with large requirements for manufacturing space, with very little technical accommodation. The high technology companies need much smaller amounts of productive space but require accommodation for large numbers of technicians, support and service personnel.

Although the Herring Son and Daw report identified this problem and applied pressure to the

NEDC, the Chancellor and others concerned, the recent Finance Act only nibbled at the edges and increased to a small extent the amount of office accommodation that was allowable in a new building, from the standpoint of tax relief via industrial building allowances.

A complete rethink is now needed on the property requirements of the electronics industry and the BMMG will be backing all interested parties and trying to organise a major change in this field. The IT industry and organisational role: BMMG believes that government has a very important part to play in co-ordinating developments in the microcomputer industry.

We have also been anxious to point out to government that it is in a unique position as a customer, a supplier and by providing the regulatory control, to provide the key influence for bringing organisations together to compete with the US and Japan.

Wherever government has provided the lead, and proposed a mechanism by which these consultations and consensus can take place we have always been anxious

to support them.

My own company is a microcomputer organisation and the suppliers sectoral committee. Focus was an initiative set up under Department of Industry chairmanship and an NCC committee, to coordinate our own input to the wide range of decision-making mechanisms: sure that we did not lose sight of the strategic advantages that can be gained by the correct site and endorsement of standards for British manufacturers.

We have also supported, the outset, the work of the body set up during 1980: Technology year to promote export of UK information technology to nations overseas.

BMMG also supports recommendations of the Committee, having provided advice and input to it, and we see the work of this leading to real resolution in the relationship between manufacturers and academics.

We are particularly anxious to exploit the proposals of the Committee also believe that small to medium-sized companies should be involved in funded development as well as large ones. A part of many initiatives, such as the BMMG programme is that medium-sized organisations which can provide the jobs and the future, have been excluded.

Now that a network of microsystems centres has been established, and that more use has been made of public facilities, it is intended that a British microcomputer centre will be familiar with the capability of the UK machine.

A Software Directory has been sponsored and will become a low pages for the future, providing reference for clients and UK software for all types of business applications.

In addition to the above initiatives and many others BMMG continually providing input to all organisations responsible for the IT industry. Why should manufacturers support the BMMG? Our industry consists of many medium-sized companies determined to become larger companies of the future, curing the economic ills of more jobs and more opportunities.

Unfortunately in the day to day technology change, each company by itself, has limited ability to make a lasting input to the regulatory agencies.

The BMMG, from its days, has provided the means for representing the voice of manufacturers and their voice does not go unheard. Secondly, because of its representation to the government, being at a very senior level, it provides an opportunity to provide the businessmen concerned with industry, to meet and discuss interests and opportunities of the industry.

There have been many examples of inter company co-operation and also agreement on the part of certain standards.

All these matters make it clear that the BMMG exists to maintain, both in representation and also in ability to provide the resources to follow up on the industry have a keen sense of the needs of the British microcomputer

Paul Walton investigates the seemingly high prices of software packages imported from the US by distributors

Why the Atlantic crossing is such a pricey package deal

ARE consumers of US-written packaged software being ripped off? How widespread is the practice of mysteriously exchanging the dollar sign on the original US price for a pound sign on the UK price, making imported purchases a third to a half more expensive over here?

The answer is that the "missing" 30%-50% price hike is swallowed up because the software is actually crossing the Atlantic. It does not necessarily go straight into the pocket of some unscrupulous dealer.

Philip Virgo, manager of the National Computing Centre's (NCC) Microsystems Centre in London runs basic courses in how to go about choosing the right software package.

He sees most products being offered on microcomputers, and he notes the Atlantic inflation in most. "It is odd to find a package where that has not happened," he says.

To be fair to software dealers, most gave good reasons for the price differences. And major microcomputer package publishing house Lifeboat actually bucks the trend, by faithfully converting dollar prices more or less directly into pounds.

The higher cost of US-written software is something which affects the microcomputer package market, almost exclusively, with minicomputer or mainframe software either being bundled in with the complete system, or being sold on very different "charge by use" licence fees.

And it is not just software, but US hardware which also gains a few pounds when it comes to the UK.

There are three kinds of pricing approach for the consumer-oriented microcomputer package, and all three stem from the fact that the end-user buys software as the floppy disc holding the product.

But with applications packages costing from a few hundred pounds, to several thousands, the price is getting considerably more for this time than hard-pressed

record companies!

A growing number of this country's software distributors begin by flying out to America, to find a package to sell. Marketing Micro Software (MMS) of Ipswich went straight to the experts for its US package.

Rex Ratoff, the company's finance director said it got the Tool Kit (TK) Solver software from Software Arts, the same group of people who wrote the big-seller VisiCalc. MMS negotiated what Ratoff calls "a very good price" with Software Arts, and is the first European distributor for the package.

Ratoff agrees that charging the same sterling as dollar price "does seem to be the accepted thing in the trade". But his explanation is a generalised view, and not limited to MMS itself — it is that American software authors "don't understand the UK, or European distribution syndrome at all".

"Most US software authors are not very export oriented, in fact I would say that they are frightened to death of exporting," he says. "We have this image of the American entrepreneur who grabs the world by the scruff of the neck, but it's not true."

"In fact they are computer boffins, most of whom think more easily in programming languages. They write some package and find that sales come very easily — they have a massive market right in front of them."

"Sales of a microcomputer software package might literally go on forever for a product in America. If they do think of Europe at all, it is as if it were another state, maybe Texas. Software authors producing the world's best packages are in fact naive about selling it abroad. We have to go to them, a hint of trouble and they don't want to know."

With the first approach to pricing the floppy disc and its associated documentation is wholesaled just like an LP or single. The UK distributor thinks he or she has spotted a potential hit, or a dealership with the US software author is arranged.

Ratoff has applied his training as



Products from the US can show big price hikes as the \$ sign changes to a £. But this doesn't mean every dealer is "on the make".

an accountant to the pricing chain, which goes as follows. The American supplier is used to wholesaling thousands of floppy disc copies of the software through state-based distributors, giving them a 50% discount.

The state wholesaler takes his 10%-20% cut, and passes on the product to retailers — most probably a chain of retail shops — which take the other 30%-40% of discount on offer.

When faced with a UK distributor, the American supplier simply offers him the same wholesale deal. But before his package can be sold, 10%-15% freight and 6%-8% import duty is removed from the margin. To give UK shops the same 30% mark-up, our UK distributor is left with nothing.

"By the time we have put that microcomputer package into the shops — with a margin for taking the risk of stocking it, and VAT — we are left with nothing," says Ratoff.

So, what he calls the "logical, as well as simple solution" is for software distributors to treat dollar prices as if they were pounds.

With the exchange rate fluctuating between \$1.8 and \$1.5 to the pound, this gives distributors like MMS room to manoeuvre, and an incentive to winkle out new and often unknown packages from reluctant American software authors.

As a footnote, MMS claims to sell TK Solver at a recommended retail price of £286, which is comparable with the US price of \$399. "So we are not in that syndrome

for TK Solver, but we have had to to it in the past where we didn't have quite such a good deal as the one we've got with Software Arts," Ratoff adds.

Because more and more people are becoming microcomputer package distributors for the first time, many are being forced to pass on costs associated with starting up business in the first place. Virgo sees this kind of price inflation, where "the new firm wants to generate a good cashflow very early on, to pay for advertising, good support staff, or even premises".

"If one of my customers wants to buy software, then he should be able to buy it at the same street price here as in New York. It seems like a fair thing to do."

With the second pricing approach, the software distributors pass on some of their fixed costs to first customers in what Virgo describes as "a very dodgy commercial equation".

But distributors often describe this type of margin, again directly equating dollar and sterling prices, as a buffer against other variables such as currency fluctuations.

Jim Duncan is technical manager of MOM Systems in Aberdeen, and he favours the "Buffer" explanation. MOM is relaunching its US-written Condor microcomputer database, which competes with Ashton Tate's big-selling dBase II package. He gives a salutary warning to those who would

equates dollar prices with pounds. "If you did a direct translation of prices, you would probably end up losing money, taking the exchange rate at present of around \$1.60 to the pound. It is standard practice I know, but it very much depends on each circumstance," says Duncan.

MOM is selling Condor "far cheaper" than the US software author of the same name, because it managed to strike a good deal for this product. On sale in the UK for £285, the US price of \$650 is considerably higher.

Duncan says he has done direct

its current manageress is Helen Smith. Lifeboat is one of the few distributors of microcomputer packages to offer comparable prices on both sides of the Atlantic, with no strings.

"If one of my customers wants to buy software, then he should be able to buy it at the same street price here as in New York," says Smith.

Lifeboat is one of the world's largest software publishers, marketing packages for smaller firms. Lifeboat succeeds by being dependable, according to Smith. "We want to keep our prices stable. That means thinking ahead, and taking more trouble over things like currency fluctuations. If the exchange rate is \$1.60, we win, but if it drops to below about \$1.50, we're going to lose out."

On the whole microcomputer software consumers in this country are not getting ripped off, but neither are they getting the enviable deal of their American counterparts. The abundance of packages in the US means that distributors are needed, to transport it over the Atlantic.

In the course of that journey, there are costs. Profits must be made, or the distributor would not bother. There is the problem of who will support the software, and of the ever fluctuating exchange rate.

And like hardware, software goes through its price cycles — getting cheaper as sales rise. So the mass marketing organisations are able to sell like VisiCalc very cheaply, until something better comes along.



Virgo: Notes inflation in most imported packages.

Richard Veryard reports on the revolution in musical instruments

The latest sounds are strictly digital

ABOUT 200 years ago, music was transformed by the introduction of a new instrument — the piano. From Beethoven to the present day, most composers have been able to play the piano, and many have been virtuoso performers.

Since its invention, and particularly in the 19th century, the piano has dominated the history of music. Pieces intended for whole orchestras of string and wind instruments have been arranged for the piano. Before the days of radio and record players, every music-lover had one in the drawing room.

Attitudes towards harmony and tonality changed under the influence of the new instrument, so that even pieces for "traditional" instruments such as the violin or the human voice were written according to the new ideas of musical composition learned from playing the piano.

We are now seeing the emergence of a new musical instrument, which can be expected to dominate the musical world of the 21st century at least as much as the piano did in the 19th. That instrument is the computer.

How can a computer produce music? An ordinary digital processor can only output numbers. To convert these numbers into anything else — from a pattern of coloured dots on a screen to a new design of microchip — requires specialised hardware or software, or human effort.

Early attempts at computer music, for example by Iannis Xenakis in the 1950s, relied on human effort. The composer would write a program (usually including a random-number generator) which printed out tables of numbers. The composer would then have to transcribe this "stochastic structure" on to a musical score, which could then be played in the traditional manner by human performers.

This is, in effect, an up-to-date version of a technique used by Mozart, who is known to have thrown dice to decide upon a pattern of notes. The disadvantages in this method of working are obvious: it

was laborious and error-prone. The advantage, besides simplicity, is that the composer has the opportunity to adjust the output to achieve a more aesthetically pleasing result.

A computer can of course do more than merely serve as an expensive roulette wheel or set of dice. If the algorithm for getting the notes from the numbers can be coded in a high-level language, the computer should be able to print the musical score directly. Several systems are available to do this, including the Synclavier and the Apple SoundChecker.

New opportunities for the application of computers in music have arisen from the replacement of analogue recording techniques by digital recording. Not only professional studios but many hi-fi fanatics as well have equipped themselves with digital tape-recorders.

A unit can be bought for a few hundred pounds to convert a Betamax video-recorder into a digital tape-recorder, and digital discs

Fairlight systems have been installed in a handful of university music departments in the UK, but the main market is in the rock music industry. Many rock stars possess a machine

give a far higher sound quality than ordinary LPs. Instead of representing sound as a magnetic waveform, it can be stored by sampling the amplitude of the waveform at small intervals, typically at a rate of 30K-50K per second.

Besides being used to process this sound, a computer can generate sound from scratch by calculating the amplitude numbers mathematically. This is known as direct digital synthesis.

If a computer is to produce sound real time (or "live"), it must be able to calculate the numbers that represent the sound at a faster rate than the sampling rate. Since the programs involve a lot of heavy number-crunching, this was not possible in the early days of direct digital synthesis, and the sound

was generated in two passes. First the program would be run to calculate the amplitude numbers. This would typically take several minutes of CPU time for only a few seconds of output sound. Then the numbers would be retrieved in a second pass and fed through a digital-to-analogue converter to a loudspeaker.

In the last few years, improved hardware and software have made these two passes unnecessary, and the synthesis can be carried out live.

There are two main mathematical methods for calculating the waveform. The first method, used in programs written at Bell Labs and MIT in the 1950s and 1960s, involves the theory of Fourier Analysis.

A sound is broken down into its harmonic components, which are simple sine waves. These are then added together, using Fourier Transformation, to produce the wanted sound. This is known as additive synthesis. It relies on a

without anyone having to crash a plane in order to record the sound. Ircam has teamed up with Sogitec, a French industrial simulation firm, to sell the 4X real time digital signal processor, for such industrial applications and for musical composition.

In the systems described so far, the computer output is a digital representation of the sound. This can be converted into voltage fluctuations, which can then be smoothed, amplified and played through a loudspeaker.

Several hybrid systems have been developed in which the computer output is used to control some other device. A pipe organ can be played by a computer by wiring the computer to electric motors fitted to the valves of the organ.

A more common form of hybrid system includes a computer and a synthesizer. The voltage-controlled synthesizer was invented by Robert Moog in the mid-1960s, and has been used by rock musicians for over a decade. It may be controlled by hand using a panel of patch cords (like an old-fashioned telephone switchboard), knobs and switches. These control and combine the various components of the synthesizer, which include oscillators, filters, voltage-controlled amplifiers, mixers, voltage processors, trigger generators, ring modulators, envelope generators and a sequencer.

All these can be of course be controlled by computer instead of by hand. The BMS studio in Stockholm contains one of the most sophisticated examples of this type of analogue hybrid system.

The Moog synthesizer is an analogue device; it processes data in the form of voltages. The digital hybrid system can be much more efficient for generating simple sounds than a direct system. As would be expected, it achieves this at a cost of limiting the scope and flexibility, but not to an extent that affects many users.

The Fairlight CMI, invented by Australians Kim Ryrie and Peter Vogel, is a good example of a digital hybrid system. It combines familiar units of hardware and software (general-purpose processor with Basic compiler, floppy discs, VDU and light-pen and typewriter keyboard) with specially designed software and peripherals, including eight digital synthesizers (to provide eight-track sound output) and a six-octave piano keyboard.



KATE BUSH... Has used the Fairlight system on recordings.

Fairlight systems have been installed in a handful of university music departments in the UK, but the main market is in the rock music industry. Many rock stars possess a machine; among those who acknowledge it are Kate Bush and Alan Parsons.

The Fairlight system is designed to construct pieces of music from single synthesized notes. A note can be generated from scratch, using additive synthesis as described above. Alternatively, the system allows sounds to be input through a microphone which samples it and converts it to a digital representation for manipulation by the computer.

Once stored on disc, the sound can be edited and modified. The characteristics of the sound — pitch, duration, attack, damping, vibrato — are treated as independent parameters that can be varied one-by-one. These sounds are the raw material for pieces of music; the composer builds melodies and accompaniment from these notes as if they were Lego bricks.

They can be strung together in up to eight independent "voices", either by writing programs in the interpreted language MCL or by playing the required sequence of notes on the piano keyboard.

The piano keyboard can be used live, calling up raw sounds input beforehand. Rock musicians who can't play the piano, not even with two fingers, are provided with a guitar interface.

A composer can thus assemble anything, from repetitive backing tracks to entire pieces of film or serious music, using a very few basic sounds input. A single bass-guitar note can be played into the sampling microphone and stored on floppy disc. The computer analyses this note and allows each characteristic to be altered until the right "shape" is achieved.

Small variations in pitch, timbre and duration leave notes still recognisable as bass-guitar notes. By stringing together these different modifications of the original note, the whole bass-guitar track can be laid down. It will probably be more accurate than a real musician could have played it.

When the parameters are varied more widely, sounds are produced which are no longer recognisable as bass-guitar notes, and which could not be played by any guitarist, however virtuoso.

Alejandro Vinas is a composer who works in the electronic music studio at City University. His recent piece *Hendrix Haze*, inspired by the musical features of Jimmy Hendrix, was mostly composed on the university's Fairlight system, but the limitations of that system forced him to complete the piece in the BMS studio in Stockholm.

The piece contrasts two ap-

proaches to computer music: composing with notes and composing inside notes. The Fairlight system is quite good at composing with notes, in other words treating notes as atoms from which the music is assembled, much as an organic chemist would string atoms together to make complex polymers.

It is not so good for the composer who wants to shape new from the inside (equivalent in analogy to subatomic physics). A composer often wants a single note, lasting several seconds, vary its characteristics while it is being played. The most obvious example is a glissando, where a note changes its pitch from beginning to end.

The City team has developed a technique of using a second output voice to control the parameters of the first; this technique provides a roundabout way of sliding pitch or vibrato within a single note, but this technique was not powerful enough for Vinas.

It may be deduced from what has been said so far that computer music has some way to go before it establishes itself fully in the mainstream of musical life.

In the first stage of computer music development, the computer carried out instructions laid down in advance in order to generate music in advance. We are now in the second stage of development, where at least music can be generated in real time.

In a couple of years we can expect to see the composer controlling all aspects of the music with real time input during a live concert. This will allow jazz musicians to play on the computer, or on computer-aided instruments, in free improvisations.

The problems to be solved before we reach this third, mature stage of development are many. How is the musician to control the computer? He must be given the freedom to follow his musical intellect or instinct. He must be given the maximum expressive power. How is he to be given this freedom, this power, without the system becoming too complicated to use properly?

The research continues on several other fronts. Enhancement of processor speed will allow yet more number-crunching to be done live. The computer is basically a mono instrument (if we exclude hybrid systems); advances in parallel processing will allow it to become truly stereophonic.

Hendrix Haze by Alejandro Vinas, together with computer compositions by Richard Aire and others, will be played at the Almeida Theatre, Tooting, London on Sunday, August 14 at 8pm, and will be released as a record on the Digital Arts label.

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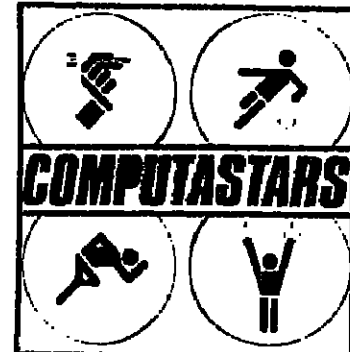


MOZART... Threw dice as an aid to composition.



KIM RYRIE (right)... Co-inventor of the Fairlight system.

موسيقى الحاسوب



Sponsored by Computer Weekly.

Taking part in this year's UK finals

LISTED below are those who took part in the UK finals. An asterisk denotes the team captain.

MEN

Rank Xerox Europe Addon, Fergus Brown, Kevin Davies, Tony Pook, Russell Tamm, Digital (UK) Steve Landry, Simon Pentland, Paul McGarr, Ian Turner, Paul Vassall, Computer Systems & Products Andy Fletcher, Adrian Hill, Susan Kent, Kevin Morris, Simon Russell.

Commercial Union: Gordon Davies, Andy Gutteridge, Steve McKinnon, Graham King, Mike Stacey, Centre-File (1): Paul Adams, Cyril Chan, Colin Thomas, Derek White, Horace White.

Thorn-EMI Data Communications: Alan Davies, Paul Humphreys, John Topping, Nick Veli, National Provident Institution: Dave Cross, John May, Mike Potts, Geoff Williamson.

Ford Motor Co: Mark Atkinson, Paul Dineley, Chris Hurst, Gary Marshall, Colin Wan, Capleware: Chris Russell, Cliff Ford, Richard Pinner.

Legal & General: Paul Allen, Jeff Martin, Steven Pegg, Steve Nelson, Martin Walker, Open University: Graham Cox, Dave Pindick, Charles Kendall, Chris Black, Gerald Stevens.

London Borough of Lambeth: Mark Abernethy, Geoff Clarke, Tim Whyte, Peter Wright, Brian Young, Crawford Computing (UK) Barry Ching, Joseph Hudson, Robert Hare, Malcolm Smart, Philip Williams.

Kalamazoo (UK) Jeff Harrison, Richard Joseph, Ray Roberts, Richard Smith, Neil Wright, Bank of America: Peter Jones, David Smith, Alan Jones, John Atkinson, Andy Norman.

Scottish Widows: Bernice Callaghan, John Cairns, David Hadden, John McLean, Alan Norman, British Rail: David Elliott, Roland Gibbard, Nigel Robinson, Nicholas Simpson, David White.

Rowntree Macintosh (UK) Tim Broadbent, Alan Johnson, John Atkinson, Andy Norman, Kalamazoo (UK) Barry Durnan, Ray Hendrickson, Malcolm Smart, John Williams, John White.

Barclays Radcliffe: John Bramble, Dave Cole, Ian Gledhill, Steve Harty, Hopson Levy, British Rail: Peter Jones, David Smith, Alan Jones, John Atkinson, Andy Norman.

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Barclays Radcliffe: John Bramble, Dave Cole, Ian Gledhill, Steve Harty, Hopson Levy, British Rail: Peter Jones, David Smith, Alan Jones, John Atkinson, Andy Norman.



Legal & General's Anne Bragg... two first places and victory in the women's individual.



Paul Whyte... best performance in the shot.



Gill May heads for home in the relay.



The victorious Kalamazoo ladies look happy with their success.

Heywood and Kalamazoo triumph by narrow margins

AFTER basking in the sun at the regional heats, Computastars finalists and officials were treated to a deluge of truly Mancunian proportions, albeit at Birmingham. The sudden stars splashed their way through the morning's events with commendable courage and a large number of umbrellas.

A vital adjunct for the first event, the shot, was a dry towel to dry off the slippery sphere. A throw of well over 16 metres by Paul Whyte of the London Borough of Lambeth, coupled with good performances from the rest of the team, saw Lambeth take an early lead.

Best performance by a number one came from Vernon Turner, Bank of America, beating Steve Skelton from Harlequin Cooper into second place.

Kalamazoo's women started well, taking first place in the first three events. Case was runner-up to Kalamazoo in the shot, while Alison White, of Centre-File, took the first of four individual victories, beating Anne Bragg of Legal & General and Janet Carter of Case into joint second.

The hockey dribbling was made doubly difficult by the slippery conditions, with the earlier teams perhaps at an advantage as the course became more treacherous as the event went on. But it was one of the last teams to go, British Shoe Corporation, which triumphed over adversity, with number one Phillip King putting in a particularly good time to take the individual title.

Kalamazoo's women won again - what do they feed them on? - but it was Centre-File champion Alison White who again took the individual title, this time beating Janet Carter by three points.

Next came underwater netball - well, pretty wet netball anyway. Best male performances came from Rowntree Macintosh 1's team and Commercial Union number one Graham King.

Yes, it was Kalamazoo's ladies in the driving seat yet again, and Alison White taking the individual. In an unusually kindly set, competition organiser Gordon Cairns decided that the track was too wet for the sit ups, and postponed the event until later. Therefore, the team sprints were brought forward from the afternoon.

A considerably shorter course than before meant more sprints were possible in the allotted time, and a commensurately higher number of starts meant a more using event, thus dispelling any thoughts that the organiser was getting soft.

Legal & General's women's team splashed its way to first place in the sprints, with a three-way tie for second place between Kalamazoo, Barclays and Commercial Union. Legal & General number one Anne Bragg took her first victory of the day, and another three champions, Alison Grant, Liz Porter and Sonia Turner, tied for second.

At the break, Kalamazoo led Legal & General by 134 points to 114, with Barclays one point behind. Alison White was in the lead by a single point over Anne Bragg, Alison Grant was third, eight points adrift.

Best male sprinters proved to be Heywood and Crawford, tying for first place, with their respective number ones, Bill Edwards and Robert Hurst, duplicating the situation in the individual competition.

Men's positions at the interval were Heywood & Partners in front, with Kalamazoo 1 a single point behind. Crawford was lying third, Rowntree Macintosh fourth and Digital 2 fifth.

After lunch, we finally got round to the sit ups, the track having dried out as the sun tried its damndest to shine. The seemingly impregnable record of 74, held by Lambeth number one Geoff Clarke, was beaten by two competitors, both scoring a frightening 80. Clarke tried to reply, but only (1) managed 76.

The team title went to Kalamazoo 1, scoring its only victory of the day, and the individual was shared by David Cain of Barclays and Geoff Clarke.

Phil Wright... UK champion.



First, second and third places for (from left to right) Heywood & Partners, Kalamazoo 1 and Crawford Computing.



Sponsored by Computer Weekly.

pectively. Barclays took the bronze.

Anne Bragg of Legal & General turned in the best time in the steeplechase. Kalamazoo 1's victory of the day, making her the most successful female in team first places.

And so to the final event - the return, by popular demand, of the steeplechase. Kalamazoo 1's victory of the day, making her the most successful female in team first places.

The best combined male and female performance came from Kalamazoo, with Barclays second and Commercial Union third.

In the ever-popular Computastars, it was the lovely lady from Thorn-EMI who swept the Inland Revenue men off their feet on the churned-up turf of the Alexander Stadium.

A sad note to end with. Gordon Cairns has not as yet secured a sponsor for the overall European final which brings in Belgium and Holland.

Several potential sponsors have dropped out at the last minute and if no one comes forward by Friday, August 19, there will be no contest on Sunday, September 18.

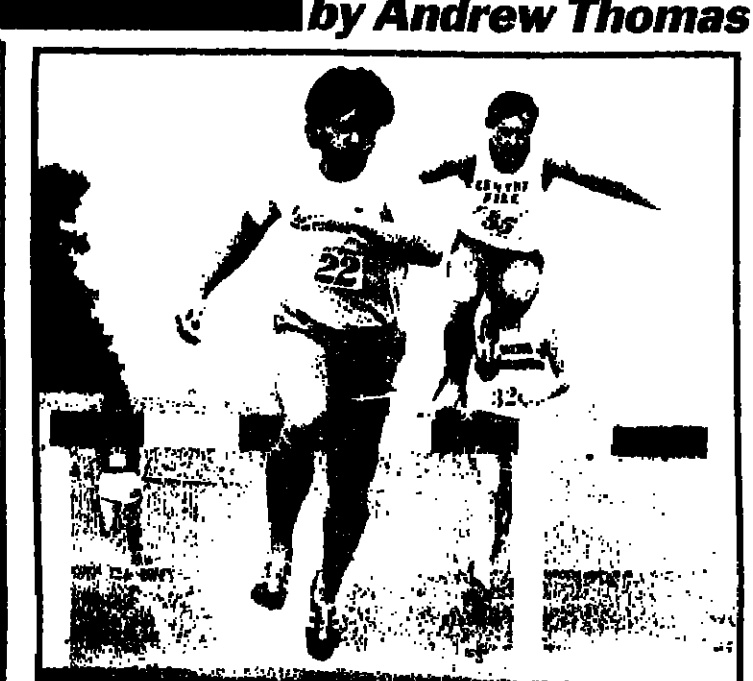
If you feel your firm can help, in return for the publicity and copious amounts of goodwill, get in touch with Gordon Cairns on 01-688 6690, quickly.



Alison Grant... third individually and a member of the winning Kalamazoo team.



Kalamazoo 2's Malcolm Shuttleworth... joint fourth in the sit ups.



Digital's Simon Pentland leads at the water jump.

How the events were won

MEN'S TEAM RESULTS									
Rank	Name	Points	Rank	Name	Points	Rank	Name	Points	Total
1	Heywood & Partners 1	27 21 35 32 39 31 45 37	2	Kalamazoo 1	26 31 34 34 39 28 36 38	3	Crawford Computing 1	20 24 26 27 27 37 45 26	232
4	Commercial Union	26 25 30 26 45 27 21 27	5	Barclays Radcliffe	18 26 27 31 35 30 27	6	Rowntree Macintosh 1	25 26 36 31 24 20 24 26	212
7	NPI	25 22 28 19 42 18 21 32	8	Legal & General	29 28 33 30 22 18 19	9	Digital 2	21 28 33 36 12 30 23	203
10	Kalamazoo 2	22 28 25 29 30 28 18 22	11	British Aerospace 2	19 22 29 27 27 14 33 29	12	Scottish Widows	22 28 25 33 16 24 30	200
13	Digital 1	22 28 25 33 16 24 30	14	Bank of America 1	26 24 21 33 31 16 30 28	15	Harley Cooper	16 26 10 21 30 29 33 28	193
16	Ford Motor Co	23 25 27 23 21 19 30 24	17	Barclays Inter 1	27 21 29 24 31 25 24 18	18	Thorn-EMI	24 22 22 24 9 29 33 21	184
19	Sheffield Iron	22 27 8 26 21 28 30 21	20	Rowntree Macintosh 2	16 13 12 15 17 18 30 26	21	Open University	17 23 16 15 17 18 30 26	172
22	Scottish Widows	23 25 21 22 18 26 16 16	23	Legal & General	11 26 28 25 15 22 18 19	24	Centre-File 1	16 27 33 19 15 17 15 19	161
25	CSP	16 27 33 19 15 17 15 19	26	British Rail	12 23 23 20 6 21 36 19	27	British Gas Corp	12 23 23 20 6 21 36 19	158
28	Robert Hare	18 23 25 16 18 13 12 17	29	Capitex	21 25 24 0 18 15 6 6	30			109

MEN'S INDIVIDUAL RESULTS									
Rank	Name	Points	Rank	Name	Points	Rank	Name	Points	Total
1	Phil Wright	9 12 12 11 13 10 12 13	2	Bill Edwards	10 9 12 13 7 9 15 10	3	Robert Hurst	8 8 13 7 9 15 10 8	85
4	Bernice Callaghan	9 7 13 10 11 14 8 13	5	Dave Cain	4 10 12 13 11 15 10 9	6	Graham King	8 15 7 10 7 6 7	77
7	Richard Downes	7 11 13 8 5 12 8 13	8	Malcolm Shuttleworth	7 11 13 10 10 12 6 8	9	Steve Skelton	11 8 4 9 10 10 11 13	76
10	Dave Cross	11 8 4 9 10 10 11 13	11	Paul Skivington	10 10 11 11 7 7 7 10 13	12	Geoff Clarke	6 12 9 13 10 7 6 10 13	73
13	Mike Milne	7 9 10 9 9 7 7 12 10	14	Mike Milne	5 7 8 12 13 11 10 10	15	Tim Brandreth	8 6 11 11 8 7 8 9	68
16	Mike Hawtrey	7 11 4 8 7 12 10 10 7	17	Steve Skelton	7 13 6 6 12 4 12 7 12	18	Vernon Turner	13 7 13 6 6 12 4 12 7	66
19	Grant Atkinson	9 12 8 9 7 7 1 10 9	20	Stewart Aylott	5 6 13 9 9 1 11 11	21	Clay Osborne	8 9 10 6 6 7 6 6	65
22	Simon Russell	5 9 12 5 10 5 5 7 7	23	Philip King	4 15 4 11 2 10 5 6 7	24	Richard Gibbard	3 12 12 12 12 12 12 12	64
25	Simon Russell	5 9 12 5 10 5 5 7 7	26	Simon Russell	5 9 12 5 10 5 5 7 7	27	Simon Russell	5 9 12 5 10 5 5 7 7	63
28	Simon Russell	5 9 12 5 10 5 5 7 7	29	Simon Russell	5 9 12 5 10 5 5 7 7	30	Simon Russell	5 9 12 5 10 5 5 7 7	62

WOMEN'S TEAM RESULTS									
Rank	Name	Points	Rank	Name	Points	Rank	Name	Points	Total
1	Kalamazoo	23 25 21 37 39 26 45 35	2	Legal & General	21 26 33 28 27 22 33 27	3	Barclays Radcliffe	13 29 34 26 38 23 15 23	193
4	Digital	21 26 33 28 27 22 33 27	5	Commercial Union	13 29 34 26 38 23 15 23	6	Case	26 31 21 14 45 20 12 32	191
7	Crawford Computing	23 25 27 19 12 15 24 22	8	Centre-File	27 28 25 23 6 25 18 15	9	Row Services	18 22 23 24 20 6 25 18	163
10	Surrey CC	21 23 21 14 6 17 27 25	11	Mercantile Credit	16 19 18 23 12 18 16 25	12	Bank of America	23 11 27 10 12 22 9 18	132

WOMEN'S INDIVIDUAL RESULTS									
Rank	Name	Points	Rank	Name	Points	Rank	Name	Points	Total
1	Anne Bragg	12 11 10 15 13 10 15 15	2	Alison White	15 15 15 8 2 15 11 12	3	Alison Grant	9 9 11 15 15 11 11 12	80
4	Janet Carter	12 12 11 5 15 11 4 10	5	Liz Porter	8 7 12 8 9 9 11 13	6	Sonia Turner	8 7 12 8 9 9 11 13	77
7	Sonia Turner	8 7 12 8 9 9 11 13	8	Sonia Turner	8 7 12 8 9 9 11 13	9	Sonia Turner	8 7 12 8 9 9 11 13	71
10	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	11	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	12	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	69
13	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	14	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	15	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	64
16	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	17	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	18	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	63
19	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	20	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	21	Caroline Carter Jones	9 10 9 7 4 7 6 7 6	62

Shower on, from left to right: shot, hockey, netball, sit ups, relay, football, main games, any other.

S denotes a small unit; V a separate team. Scoring by Computer Weekly.

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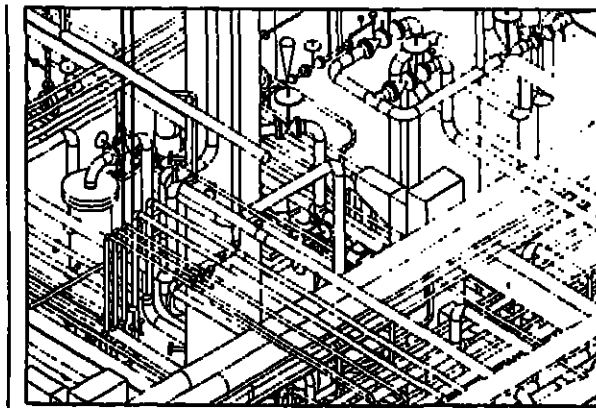
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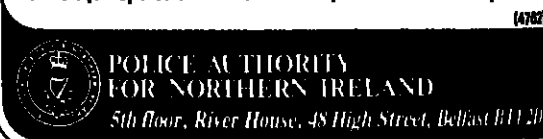
Grading and starting salary will be related to qualifications and experience. Allowance may also be made for relevant past graduate experience.

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22 days leave per year in addition to public holidays.

The Authority may decide to interview only those applicants who appear from the information available including qualifications, duration and extent of previous experience, to be best suited for the post.

Application forms which must be returned not later than 11 August 1983 and conditions of service are obtainable from Recruitment Section (Telephone Belfast 230111, Ext 242 and 271).



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459815/6/7

International Data Centre and world-wide Telecommunications

Our Client, based in a pleasant environment close by the M1 just north of London, continues to make impressive advances within its field. The Company has a wide range of IBM and other vendor computer equipment processing on-line and batch systems for its operating divisions and subsidiaries across UK and Europe and has telecommunications links to the U.S.A., Africa and Australasia. A thorough appraisal regarding future strategy has recently been completed resulting in requirements for a number of dedicated computer professionals. Serious career oriented men and women will want to examine the outstanding opportunities this organisation can offer.

A number of these positions involve international travel.

SYSTEMS SOFTWARE & SUPPORT

Systems Programmer c.£14,000

Senior D.P. Specialist up to £12,000

API Specialist up to £12,000

Three vacancies are on offer. Firstly there is a requirement for a Systems Programmer who has considerable experience of working in an IBM mainframe environment on a range of software which includes MVS/SP, JES3, RACF, AC/FVTAM, IMS DB/DC, Roscoe, and TSO.

Quote ref. CW 735

Secondly, they require a D.P. Specialist for an interactive support role, who is fully conversant with all areas of IBM software. To advise customers on how best to maximise the efficiency and scope of the system including security, maintenance of software products, planning user requirements etc.

Quote ref. CW 734

An essential part of both of these jobs is short-term European travel; therefore a high element of self-motivation and personal commitment to achieve company objectives will be required.

Finally, there is a position calling for an API Specialist. This person will support a variety of software and user requirements. Previous bureau experience would be most appropriate.

Quote ref. CW 736

Capacity Planning Specialist up to £14,000

Forecasting user computer demands and utilising modelling techniques to interpret requirements for component upgrades calls for a very specialist skill. The company has recently installed the latest CMF package for capacity planning purposes. Knowledge and experience of IBM hardware and software is essential. The ability to use modelling tools and techniques, inquiry facilities such as API, SAS and Easytrieve would be desirable. A high degree of initiative and inventiveness, working without supervision is required. Close liaison with customers in the development of workload forecasts, offering them advice on updates in the rapidly changing DP environment will be very important.

Quote ref. CW 739

Standards Co-ordinator up to £12,000

This is a newly created position. It requires self motivation and the ability to initiate and co-ordinate activities in a multi-disciplined and internationally based operational and technology support environment. Success in the job will be measured by the general acceptance of and adherence by users to the technical standards and procedures put in place by the applicant.

You will be responsible for reviewing the existing technical documentation, standards and procedures and rationalising all documentation into user guides and manuals. Computer technical writing or broad IBM operational experience in mainframes or telecommunications should enable you to co-ordinate the information necessary to formulate standards and procedures and to communicate them to users in clear concise written English. In fact you would be required to act as the focal point for all matters relating to computing and telecommunication standards and procedures. You would also be responsible for assisting with implementation and for auditing compliance with these standards. Knowledge of at least one of the following is essential:

- * IBM MVS/SP
- * Roscoe or IMS or TSO
- * COBOL
- * JCL
- * Broad IBM operational experience including fault diagnostics, recovery procedures and remedial analysis.

As much of the operational information required for this job resides on API data bases, a working knowledge of API is highly desirable.

Quote ref. CW 740

All the above call for a good standard of education, although solid experience in the respective fields and good communication skills will be prime requisites.

The company operates a full training programme. Benefits include free life insurance, BUPA, subsidised restaurant facilities etc. In appropriate circumstances a comprehensive relocation package can be made available. Act now by sending a comprehensive career resume or telephone for an application form in strict confidence quoting the appropriate reference number. You may mention companies to which your application should not be forwarded. Ray Diamond,

GERRARDS

Gerrard Recruitment Services

37 Chapel Side, Moscow Road, London W2 4LJ. Tel. 01-221 3348.

NETWORK RELATED VACANCIES

Great reliance is placed on international telecommunications systems within the organisation. This comprises a private data network providing batch, interactive and teletype access to mainframe computers, a speech network and message transmission network.

These should be well planned, cost effective with a high availability and meet the business needs of customers.

Network Planning Specialist c.£11,500

The person we seek will assist in the planning, evaluation and control function, to ensure that capacity and topology matches evolving traffic patterns and that the benefits of modern technology are identified and secured. An analytical approach to problem solving and practical familiarity with telecommunications equipment and practices will be essential. Some European travel will be involved.

Quote ref. CW 737

Network Engineer c.£10,500

Specifically to install, commission and trouble-shoot a range of equipment including modems, statistical multiplexers and switching modules throughout the UK and Europe. An understanding of data-communications at an operational and technical level is essential. Familiarity with the technology of voice and message systems would be a distinct advantage. Documentation skills and practical experience are sought as client regards both as essential.

Quote ref. CW 738

OPERATORS

Personnel are required to further strengthen the highly professional Operations Unit. This installation currently utilises an IBM 3083, 4341 and an AMDAHL V8 running MVS/JES, VTAM, IMS, TSO and ROSCOE with an extensive telecommunications network.

Shift Supervisors c.£8,200

+ shift allowance

Shift Supervisors should have IBM MVS Operations experience, at least 2 years in a supervisory role and a thorough working knowledge of JCL, utilities and teleprocessing, together with an effective operating knowledge of interactive systems, especially IMS. Their role will be to ensure integrity of system and user data, handle user enquiries, diagnose, refer or solve system and user problems, monitor and report on hardware and teleprocessing systems, and supervise a team of operations personnel.

Because of shift working, own transport will be necessary.

Quote ref. CW 743

Senior Console Operator c.£7,000

+ shift allowance

For this post IMS on-line (particularly Master-Console) experience is essential. Applicants should have had considerable IBM MVS operations experience, display a mature outlook and have their own transport. Duties will involve working closely with a Shift Supervisor to ensure a high level of availability and responsiveness to the processing needs of our client's user community.

Quote ref. CW 742

Network Administrator c.£7,000

Voice and Message Systems Management Services seeks an experienced Co-ordinator. Ideal for someone with experience gained in a large commercial or PTT telephone exchange or communications centre seeking a career in the international telecommunications network field.

Duties will involve co-ordinating administrative activities associated with all network services including test procedures, fault control and traffic analysis costs and records, billings, directories and operating the computer based network real time status system to measure traffic on the voice system.

Quote ref. CW 741

Support the winning team!

"A WORLD LEADER RENOWNED FOR TECHNOLOGICAL INNOVATION
AND MANUFACTURE OF DISTRIBUTED MINI COMPUTER SYSTEMS"

Senior Systems Advisor

MIDLANDS - PACKAGE £13K + CAR/ALLOWANCE

The successful candidate will have a positive approach to both pre and post sales situations together with at least 5 years computing experience. It will also be necessary to demonstrate experience of:

- Commercial/Business Systems
- Systems Analysis
- Mini Computers
- Project Management
- Effective communications
- Sales Support

Training Consultant

MIDLANDS - PACKAGE £11K + CAR ALLOWANCE

This important role calls for candidates of a high calibre to provide, administer and develop Business Systems Courses for new and existing users. There will also be considerable involvement with in-house training courses for the company's support team in systems and programming. Desirable qualities will include:

- Effective personal communications skills
- The ability to organise and administer
- Practical experience of Commercial/Business Systems
- Comprehensive knowledge of COBOL
- Credibility at Senior Management level
- Thorough understanding of Data Processing

To be a part of this winning team,
ACT NOW! - for a completely confidential discussion.

Telephone 061 236 1157 during business hours, or

Evenings until 9p.m. and weekends, telephone

JEFF WALTON on 061 962 0002 or DAVID EASTON on 0270 580129

INTERFACE

RECRUITMENT & SELECTION CONSULTANTS LTD

Manchester House, 86 Princess Street,
Manchester M1 6NG. Tel: 061-236 1157.

LONDON AND THE HOME COUNTIES

URGENT REQUIREMENTS

LONDON & HOME COUNTIES

URGENT REQUIREMENTS
LONDON & HOME COUNTIES
RPG II LEARN RPG III
SENIOR PROG TANDEN
SBO LEARN 600 CICS
TSO, PLI or COBOL
SBO, CONSULTANT, PROJECT LEADING
UITS PROG, KENT
ADABAS NATURAL ADF COBOL PLI
DPM SMALL SITE E. MIDLANDS
ANALYSTS LARGE IBM COMMERCIAL
SENIOR PROG PLI FINANCIAL MORTGAGE
RPG II OIL CO. TRAVEL PROJECTS
HERTS. OS DB/DC or TSO/SP COBOL
12 to 18 MONTHS IBM COBOL, MANY JOBS
STANDARD CO-ORDINATOR GOOD ADMIN
PLI ANALYST PROGS, LOTS OF DEVELOPMENT
BURROUGHS PROGS - ALL AREAS, DATABASE DESIGN & NEO
HP 300 ANALYST PROGS, IMAGE, VIEW, 18 MONTHS
SERIES 1 PROGRAMMER, CONSULTANCY WORK IN BELGIUM

COBOL CICS 1 YEAR W. LONDON, TRAINING GIVEN
PLI MVS IBM CENTRAL LONDON, NEW TEAM
SOFTWARE HOUSE, PROGRAMMERS & DESIGNERS 'UK &
EUROPE
COBOL CICS CITY, FINANCIAL 18 MONTHS
US FORTRAN + ASSEMBLER COMMERCIAL & SYSTEMS EX-
PERIENCE
DEC BASIC & DIBOL CHANCE TO MOVE TO IBM PRO-
GRAMMER
HP COBOL ANALYST/PROGS COMMERCIAL SYSTEMS, LON-
DON & ESSEX
ICL 2966 COBOL PROGRAMMER VME TPS ON-LINE, FRIENDLY
HOUSE
INTEL 80486/8088 SOFTWARE & HW ENGINEERS ASSEM-
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BUSINESS ANALYST ON ICL, PROGRAMMING BAO PRODUC-
TION & FACTORY BENKS
VAX VMS FORTRAN, MACRO EXCELLENT OPPORTUNITIES
THROUGHOUT LONDON AREA
DEC PDP 11/70 ANALYST PROGS IN SURREY SOFTWARE
HOUSE
NETWORK SUPERVISOR, BANKING ENVIRONMENT, ESSEX
LENT BENEFITS, BASIC
ICL PROGRAMMERS & ANALYSTS PROGS, ALL LEVELS

WEST LONDON

ANALYST/PROGRAMMER

This international pharmaceutical company are currently developing major new On-Line commercial systems on their large IBM mainframe. You can help if you have a strong COBOL/CICS, PLI background, preferably gained in a DOS/VSE environment. This is a great opportunity to grow with a quickly expanding department. Benefits include THREE salary reviews per year, relocation expenses where applicable and free family BUPA.

ADF - IMS DB/DC

ANALYST/PROGRAMMER/DESIGNERS

One of the world's fastest growing consultancies currently requires additional professional expertise to supplement their already vastly experienced teams. If you have had some exposure to ADF in an IMS DB/DC or any other related environment, and would like the chance to grow with this company, call me, SIMON KONING, now and I will discuss this unique opportunity with you.

DEVELOPMENT WORK

PROGRAMMERS PLUS

City-based company using DEC and VAX require knowledgeable BASIC, +2 Programmers who could also be experienced in systems support or technical support. As candidates will be judged on their relative merits and practical experience we have been asked to short list any suitable candidates. You will need a degree or degree equivalent, a responsible outlook and an ambitious and confident attitude. This company offers good benefits and a most pleasant and friendly working atmosphere.

ANALYST PROGRAMMER

INSURANCE

A major insurance group require an additional member for their development team. We are looking for experience gained in a DOS/VSE, VMS, CICS-COBOL environment and the confidence to grow with a rapidly expanding department. Our clients offer every opportunity for advancement and training together with a range of benefits commensurate with a major employer.

ANALYST PROGRAMMERS

AND PROJECT LEADERS

Due to a policy of carefully controlled growth, these clients require a number of additional members of staff this year. They have been extremely successful in designing and installing systems based on the IBM S/36 range and require some RPG experience (any machine) together with a flexible, mature, and professional approach. Superb opportunities are offered, working with Blue-Chip customers.

FINANCIAL COMPANY

CICS TRAINING

This is not an idle promise FACT!! This well-known stockbroking company will train the right person in CICS if you have around two years' COBOL programming experience gained in a large IBM environment. Some exposure to On-Line systems would be an advantage but is not a pre-requisite. This is an ideal opportunity for someone working in a large batch environment, and would like to move into a more technical and demanding position.

HEALTHCARE SYSTEMS

PROGRAMMER

A developing company require a young and ambitious COBOL/BASIC programmer to complement an existing efficient team, based in the West End. Currently using DEC and VAX the candidate will need to be familiar with financial and payroll systems. A minimum of 18 months' experience is required. This is an exciting and useful area in which to work. Benefits include Life Assurance, Pension, Season Ticket Loan, etc. Please contact MARSHALL CLIFMAN at our London office.

OPPORTUNITIES IN PL/1

ALL LEVELS

We are continuing to take in a number of vacancies for people with PL/1 experience at all levels. Our client base includes CONSULTANCIES, INSURANCE, BANKS, INVESTMENT AND MANUFACTURING concerns based in the CITY, GREATER LONDON and all the HOME COUNTIES. If you need a change of scene contact TARGA immediately. MORTGAGE

MIDLANDS

COBOL ANALYST/PROGRAMMER

OXFORD

A leading manufacturer in the light vehicle industry, is seeking a mature Analyst/Programmer for their new installation, with experience of RPG II on an IBM S/36. Major developments are being undertaken in the area of manufacturing systems and we are looking for a sound Programmer with good analysis and communication skills. Relocation expenses will be considered.

ANALYST

COVENTRY

Our client is a leading Software House in the Midlands. Due to continued expansion they require to take on another support Analyst. You should be able to demonstrate good analysis experience on integrated Mini computer systems with some experience of BASIC however limited. Prospects with this company are excellent.

SOFTWARE HOUSE

SUTTON CALFIELD

A family business, this company is looking for an ambitious Programmer to join them. They are seeking a Programmer with DEC PDP 11 or DEC VAX experience, preferably with knowledge of RSTS/E, though this is not essential. You should be able to demonstrate a sound knowledge of BASIC + 2 and have the ability to take on analysis roles in the future.

PROGRAMMER

COVENTRY

We are looking for several COBOL programmers with two years' experience. You should come from either a manufacturing environment or a Software House and have experience of integrated Mini computer systems. The company has an over-flowing order book, and several fringe benefits are offered in addition to the salary.

For a discussion outside of office hours, phone 0787 280748 or 01-908 2818. Enquiries regarding Midlands-based positions can be left on 021-622 5838.

TCR

Targa Computer Recruitment

6 Liverpool Street, London EC2M 7NH

Monaco House, Bristol Street, Birmingham B5 7AS

Telephone 01-283 9941 Telex 25851

Telephone 021-622 2045 Telex 334237

Programmer-Software Support IBM4331/41 with DOS,SSX Portsmouth Starting pay up to £10,889

We are one of the largest computer users in Europe and need to strengthen our computing capacity in the Portsmouth Area still further, because of the development of new customer services. In the circumstances, we require another Programmer to provide software support at our Portsmouth Computer Centre for Regional and Area computing on IBM 4331/41 hardware.

You will be working within a software group of about 12 people supporting a variety of systems e.g. DMF (MONITOR/J) VME/B,

Application Support. Your main responsibilities will be to get IBM DOS, SSX, MSA Support off the ground, and establish a rapport with Regional and Area customers aimed at fulfilling their IBM computing requirement.

To be considered, you will need GCE/A levels or equivalent and 18 months IBM programming experience involving DOS and SSX.

Find out more about this job by ringing Jackie Malin or Margaret Thompson on Portsmouth 750034 (Ansafone available outside office hours).

British Telecom
Data Processing Executive

Laboratory Staff

Holland

Airwork Ltd. are seeking applicants for vacancies on a new contract in Holland.

Data Processing Engineer required for the processing of test laboratory data involving computers and peripherals, routine printing and plotting of test results.

Candidates will be graduates in computer programming with operating experience in data processing applications.

Familiarity with computer and plotting hardware desirable.

Computer Operator required for the programming and up-dating of laboratory test computer.

Candidates will have at least three years' experience as a computer operator in both real-time and off-line environments. Knowledge of FORTRAN programming and experience in electronics desirable.

Attractive salaries and working conditions will apply. Please send a full C.V. to Company Personnel Manager, Airwork Ltd., Bournemouth-Hum Airport, Christchurch, Dorset BH23 6EB.



IMMEDIATE START!
SYSTEM 38 - PRG 111

PROGRAMMERS AND ANALYST PROGRAMMERS

Central London and Home counties

Phone Lynn Lawes or
Heather Craddock at KPA
01-946 5822 or Lynn
01-543 4140 (Eves & W/ends)



DATA PROCESSING - OFFICE AUTOMATION

Motorola is a leader in the distribution of data processing and office automation industry. We are currently expanding our sales of office automation equipment in Western Europe.

This new and fast expanding operation in the UK requires a

EUROPEAN LOGISTICS MANAGER

with a proven successful career and experience in data processing or office automation equipment.

POSITION OBJECTIVES

- You will be required to establish
- A centralised European logistics facility for the Motorola Information Systems Group.
- Stock spares, assemblies and components for the parts support of national subsidiary field service inventory requirements.
- Determine and assist in the location and quantity of field service inventory carried by the national.
- Efficiently procure inventory in a European context in conjunction with U.S. facilities.

We are offering an attractive salary plus the use of a company car. Other benefits include life insurance, private health plan, pension scheme (all non-contributory), 20 days' annual holiday.

Send full curriculum vitae without delay to:

S. J. Sawerin
Motorola Information Systems Group
114/116 Thornton Road
Thornton Heath, Surrey



MOTOROLA
INFORMATION SYSTEMS GROUP

your appointments register

Programmers

NCR/IBM/COBOL to £15K
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Commercial London

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Cobol Leicestershire

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IBM/BURROUGHS to £15K
Commercial Accountancy London/Surrey/Manchester

IBM/PL/1/DL/1 to £11K
Database Support Middx.

ICL/ME29 to £16K
Commercial Design Herts

IBM SYSTEM 34/38 MAAPICS to £13K
Surrey

Software Engineers

CORAL/PASCAL/MASCOT/C to £13K
Communications Glos/Hants/Sussex/Midlands/Manchester

REAL TIME/ASSEMBLER to £13K
Microprocessor Design Suffolk Coast

MILITARY SYSTEMS/RADAR to £14K
Coral - Mascot Hants/Surrey/Essex/S. West

PDP/VAX/INTEL to £12K
Telecomms - ATE Derby/Surrey/London/Kent

COMMS/TELECOMS/MOD to £14K
Mini/Mainframe E. Anglia

HP3000/INTEL to £12K
CAD/CAM/ATE Home Counties

TERMINAL EMULATORS to £15K
C/Assembler London

Snr Appointments

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SALES EXECUTIVES to £25K
Micros - Minis Peripherals, etc. UK & Overseas

CONSULTANT to £15K
Military/Defence Berks.

SYSTEM PROGRAMMING to £15K
Digital/RSTS/E, BASIC Bucks

TEAM MANAGER to £17K
Computer Modelling/Fluid Flow S. London

ICL/PRE- AND POST-SALES to £16K
SUPPORT Berks.

SOFTWARE SECTION MANAGER to £18K
Pascal/C/Microprocessor Essex/Middlesex

Technical Support Manager

to c.£14,000
+ 2 lease cars
+ benefits

**West Midlands
(FULL RELOCATION)**



Specialist Computer Recruitment Ltd

A new Company has recently been established to provide a Parts and Equipment distribution service to the worldwide customer base of one of the UK's leading manufacturing Organisations. The Company will operate on an autonomous basis with its own IBM computer facility supporting an extensive telecommunications network, and will initiate its own systems development plan to cater for the needs of the business.

A Management Team is being recruited to provide the impetus to this new venture and an exciting and challenging future is anticipated.

TECHNICAL SUPPORT MANAGER

This important position calls for a strong technical knowledge of IBM MVS environments together with database and telecomms exposure (ideally CICS/TOTAL/ENVIRON 1). Duties will include controlling a technical team covering Databases, Personal Computing, Operating Systems, and Telecomms Networks, as well as planning future technical enhancements to the installation. Experience will have been gained in Systems Programming or Technical Support, but candidates will need the ability to combine technical knowledge with effective man-management skills. Initially there will be periodic travel to a Northern site, but the new Computer Centre will be located in an attractive area to the South East of Birmingham.

An excellent salary will be paid, enhanced by 2 leased cars under a Management Car Plan, and medical cover through BUPA. Comprehensive relocation assistance will be available to this delightful area with easy access to the countryside of Warwickshire and Worcestershire.

To apply, please contact the Advising Consultant, Martin Stainthorpe, on 021-236 3781 (24 hour answering service) and submit a detailed c.v. to him at the Birmingham office of SCR.

Computer Operations Senior Operations Analyst

This is your opportunity to join one of Britain's largest investment service organisations and to assist in the development of highly sophisticated computer operations.

With funds under management of some £1,700 million it is easy to understand the importance which we place on automated systems. In addition to the mainframe computers (two IBM 4341 MG 2) we have established telecommunications links to 20 remote locations plus microcomputers and text processing facilities.

Owing to the continued success of the Group, the D.P. department is expanding and we now have a vacancy for a **Senior Operations Analyst** who will report direct to the Operations Manager. The function of the job is the development of effective liaison with D.P. departments in all aspects of new systems and changes in current systems.

It is likely that the successful applicant will be in the 30/35 age range and will have had at least 2 years experience at management level in D.P. as well as having worked in a department running under DOS/VSE and CICS. A working knowledge of VSAM administration and SYSTEMS MANAGER is essential. Salary up to £12,500.

Benefits include company loan schemes, BUPA, non-contributory pension scheme and free life assurance, subsidised restaurant and a very active sports and social club.

Please write or telephone A.M. Dickinson, Personnel Officer, Save & Prosper Group Limited, Hexagon House, Western Road, Romford, Essex. Telephone: Romford 68968.

SAVE & PROSPER



DATA PROCESSING Saudi Arabia

A division of a major US high-technology corporation, awarded a contract to provide an automated logistics capability and management information systems, has immediate requirements for the following personnel, for its Riyadh office:

SENIOR SYSTEMS ANALYSTS: c.£25,000-12 years' experience

SYSTEMS ANALYSTS: c.£20,000-8 years'

LEAD PROGRAMMERS: c.£18,000-8 years'

SENIOR PROGRAMMERS: c.£16,000-4 years'

PROGRAMMERS: c.£13,500+-2 years approximately

OPERATOR: c.£13,500-2-3 years experience HP 3000 essential

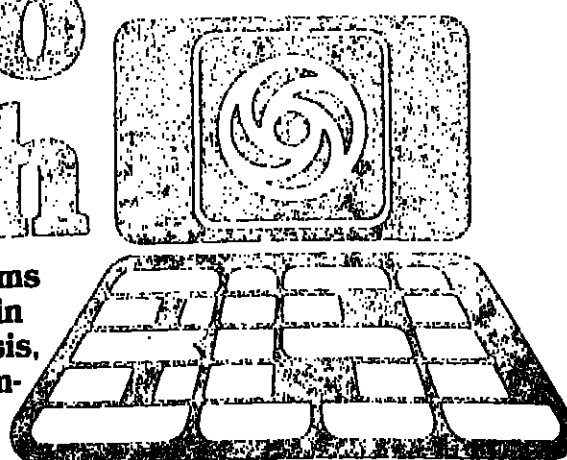
The project encompasses a logistics data processing centre linked with remote processing stations to support the function of supply, maintenance and project monitoring. In addition to getting the system operational and partaking in software development, you may be responsible for providing support and on-the-job training.

Exposure to military logistics systems development would be ideal especially if coupled with HP 3000 experience, COBOL essential and a relevant qualification would be desirable. Employment will be for a minimum period of 1 year on bachelor status. Excellent benefits include: free accommodation, subsistence allowance, generous leave with 3 home paid leaves per year; free medical care and a contract-completion bonus.

Please telephone 01-897 6688 now if you would like to be considered as final interviews will take place the last week of July/1st week in August. Webb Whitley Associates Limited, International Recruitment Consultants, 45 Kensington High Street, London W8 5ED. Telex: 892588.

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BLSL Systems Limited is the UK's leading independent Systems Company and owner of the largest private microwave network in Europe. The Company operates on an entirely autonomous basis, selling and implementing its own products and services at competitive prices within a broad and prestigious Client base.

BLSL is the market leader within the sphere of Value Added Network Services (VANS), which include VIEWSHARE (a private Viewdata service), COMET (an electronic mail service), and Interactive Decision Support Systems Services.

The Company's plans to considerably increase its share of the growing telecommunications market have continued to create new opportunities within BLSL, current requirements calling for

Communications Consultants (Salaries to £15,000 + Bonus + Lease Car)

whose role within the BLSL Communications Services Group will be to provide specialist advice and guidance to a wide range of Clients, concentrating on the areas of networking/data communications.

Specifically, duties will encompass

- * Project management of network implementations (including handover, documentation and user training)
- * Professional consultancy studies of external Clients' networking requirements
- * Providing technical support to the product, including sales/customer liaison

These demanding, yet extremely rewarding positions will suit mature, technically competent individuals, with a marked degree of business awareness, good powers of expression, an intense interest in the rapidly developing world of data communications (preferably having current experience of the design and implementation of total networking solutions), and a desire to remain directly involved in the technical aspects of networking/data communications.

Good knowledge of packet switching methods (e.g. PSS), integration, OSI standards, Government legislation regarding deregulation and experience in an IBM/DEC environment would also be highly desirable.

These positions are integral in BLSL's on-going strategy of expansion and offer a high degree of variety and challenge. Terms and conditions of employment are

excellent and include a low cost leased car, bonus system and 25 days annual holiday, together with an attractive relocation package where applicable. The positions will be based at the BLSL Data Centre, situated in Redditch, a pleasant, low-cost housing area in North Worcestershire.

Suitably qualified candidates should forward a concise c.v. to Ian Payne, Supervising Consultant at the SCR Birmingham office as soon as possible. Initial interviews will be held at SCR Regional offices during the course of the next few weeks.



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NORTH
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Manchester M3 2ER
061-833 0427

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HOLLAND
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We are the major supplier of Seat Belts and Mirrors to the Motor Industry in the U.K. and have a significant export market both direct and through sister companies and licences. At Chichester we employ c.800 people and are part of a major British public company.

As a result of reorganising and expanding our DP activities, which are based on an Amdahl V6 (12 mega) and a range of modern sophisticated software, we are looking to fill the following vacancies:

TECHNICAL SUPPORT ADVISOR

Reporting to the DP Manager you will be responsible for providing technical support for the operations and systems development section, as well as assisting users with micro's/mainframe interfaces. We are looking for 3-5 years' experience in COBOL, CICS, DLI, DOS/VSE3.

OPERATIONS SUPERVISOR

Again reporting to the DP Manager the job is accountable for Data Entry, Data Control, work schedules, operation documentation, operation standards, system acceptance testing, liaison with users on 'live systems'. Applicants should have some previous supervisory experience and knowledge of DOS/VSE3, JCL, IBM hardware and key to disk systems.

ANALYST PROGRAMMER

Working directly for the DP Manager this position will investigate, analyse, design and document programme test and implement systems and as required provide any necessary user training. Good business background with knowledge of COBOL/RPG II and extensive systems experience.

All these positions are based at Chichester with all the facilities of the South Coast close at hand. We can offer competitive salaries and a relocation package where appropriate.

Please apply in writing giving full details of age, experience and current salary to:

J. Burnett, Personnel Director,
Britax (Wingard) Limited, Chandler Road, Chichester,
West Sussex PO19 2UG.



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(4816)

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With an already established product range in the communications market including an X25 link for IBM users, protocol converters and a local area network, this American manufacturer has the ideal platform for this exciting and significant launch.

Quality has been the watchword for development of products and people and their uncompromising attitude in the attainment of high standards has resulted in staggering growth of almost 90% per annum.

This could be your opportunity to be in on the ground floor of a fascinating development in Voice/Data Communications. The product is unique in the U.K., and the success it enjoys will be limited only by the skills - commitment and experience of the successful applicant.

We do not ask that you should be unique, only that you should be a Professional Sales Executive with a strong track record in DP Sales and preferably a good appreciation of data communications.

I look forward to hearing from you... Stephen Pearson, Ref: 1272.

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(3184)



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(3184)

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Plessey Aerospace Limited, a member of Plessey plc, designs, develops, manufactures and supports a wide range of equipment for aerospace defence and industrial applications throughout the world.

The Computer Systems Department is responsible for the design, development and operation of both batch and transaction processing systems which have extensive applications within the manufacturing finance, commercial and engineering functions.

Mainly I.C.L. orientated, the computer installation includes a remote 2966 (D.M.E. under GEORGE III), two local ME 29 machines (under T.M.E.), and a local P.D.P. 11/70 running under RSX/11M.

Because of an increasing demand for new systems, the Company wishes to appoint a number of Senior Managers and Systems Analyst/Programmers to be responsible for identifying, specifying, programming or controlling the programming of a variety of business systems. These positions are at varying levels of seniority.

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Your reward
Salary is fully negotiable and sufficiently flexible to accommodate the aspirations of highly motivated computer professionals. In addition we will offer a range of attractive benefits. Generous relocation assistance to this attractive part of the Hampshire coast will be given where appropriate.

Just write, or telephone, quoting reference CWIP/874 to: J.E. Kelly, Senior Personnel Officer, Plessey Aerospace Limited, Abbey Works, Titchfield, Fareham, Hants. PO14 4QA. Telephone: Titchfield (0329) 43031, extension 2663.

These posts are open to both male and female candidates.

(4814)



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DATA PROCESSING MANAGER

Salary in
excess of £17,500
West London based

Our client, a leading International Company, urgently requires a Data Processing Manager, to control their expanding Computer Operations throughout Europe.

This position is a challenging and responsible one, which requires someone who is capable of working under pressure, making important decisions and is self-motivated.

The successful applicant would ideally be aged over 30 years, and have worked in an environment ranging from mini computers through to a medium sized IBM mainframe installation.

The candidate must also be fluent in the latest modern technologies of computing including: Telecommunications, Networking Systems, IBM mainframes, Mini computers, Data Communications and future planning.

For the successful applicant a salary in excess of £17,500 (which is negotiable), a generous car allowance, plus the usual benefits that are offered from Large International Company's including European travel.

For further information, telephone Steven Knowles-Baker, or alternatively send a c.v. to the address below. All inquiries will be treated in the strictest confidence.

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(4798)

SALES EXECUTIVES

SUPPORT CONSULTANTS for DEC SYSTEMS

ECL is an established computer services company backed by the resources of the John Laing Group, a major British organisation with international interests. We are currently successfully marketing our turnkey products in a growing market and are now seeking Sales Executives and Sales Support Consultants with drive and determination to further our planned expansion. Experience of construction related applications would be an advantage.

The successful candidates will be required to achieve personal sales objectives set by the Marketing Manager, and implement and control sales campaigns and budgets. This broad ranging role will ideally suit candidates, aged 25-35, who preferably have some sales experience in computer services.

The role is likely to be of particular interest to DEC programmers who wish to move into a customer support environment. The ability and desire to react to technical business training plus good presentation and communication skills to deal confidently with users and prospective clients at all levels are essential.

A competitive basic salary (plus commission for Sales Executives) will be negotiated to attract the right candidates. Benefits include company car, 5 weeks' annual leave, pension scheme and free life assurance.

Please write with details of experience to date, or telephone for an application form, to:

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Page Street,
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London NW7 2ER.
Tel: 01-906 5202.



(4788)

your appointments register

Sales Executives/Managers

Herts £20,000 on target
Computer bureau experience required, selling a wide range of mini and micro based solutions.

Nationwide £18,000 package
To sell computer related equipment/electronics to industry, banks and scientific research establishments. Experience of micro processor based equipment or data communications particularly useful.

SW London £18,000+
Selling technical software and engineering consultancy services.

Kent £18,000+
Technical sales experience required, communications systems of particular value.

SE England £25,000 package
C.O.M. experience of particular relevance, to sell hardware and associated software.

Middx. £20,000 on target
Sales Manager to motivate and manage existing sales force. Should be knowledgeable about small computer systems with successful experience in selling them - preferably in turnkey packages.

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Staines £23,000 on target
Experienced in selling small (micro or mini) computers preferably as turnkey systems and preferably to small companies, professional offices or lone traders.

Nationwide £25,000 package
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CONSULTANT INSURANCE OR PROPERTY c.£15K+

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ANALYSTS & SNR ANALYSTS COMMERCIAL - ANY MACHINE £11K-13K

Excellent opportunities are available for Analysts and Senior Analysts to work on the development of new systems in BUCKINGHAMSHIRE. Programming background useful but not essential.

Contact: MARILYN DAVIDSON or
LESLEY THOMPSON on 01-836 6775

Computer Personnel International
30-32 Southampton Street, London WC2, 01-836 6775

(4789)

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If you would like to tell us how your experience matches our requirements call David Borer on 01-888 2101 or send your curriculum vitae to S. J. Sewerlin, Secretary/PA to Managing Director, CODEX (UK) LTD, 114/116 Thornton Road, Thornton Heath, Surrey.

(4801)



MOTOROLA
INFORMATION SYSTEMS GROUP
CODEX (UK) LTD

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IBM 3081 with MVS using
TSO/VSPC/CICS/TOTAL/MANTIS

Halfords have two vacancies in the Systems teams located in an impressive Head Office complex at Redditch.

Candidates must possess:-

- ★ 5-7 years DP experience with at least 3 years systems analysis including the leadership of a major project
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- ★ CICS and/or database design experience highly desirable
- ★ 'A' levels

Salary up to £11,000 for suitably qualified analysts seeking a career move into a vigorous environment to play a part in major changes and developments.

The location offers a wide variety of rural and urban housing.

Relocation assistance; staff discounts; subsidised restaurant facilities.

Please write with full c.v. to: Mr. L.T. Richards, Staff Manager, Halfords Limited, Icknield Street Drive, Washford West, Redditch, Worcs. B96 0DE.

(4787)

HALFORDS

Analysts/Analyst Programmers/Programmers

*Join the high speed excitement
of British Caledonian and watch
your career climb sky high.*

Analysts (Ref.123)

The successful applicants will have at least three years' experience and during that time will have developed at least one successful major system.

Analyst Programmers (Ref.124)

Perhaps slightly less experience than above in terms of systems development, but would have played an important part in systems development and ideally will have a Cobol background in an IBM environment.

Programmers (Ref.125)

At least eighteen months' experience of using Cobol in an IBM environment. Will feel technically sound and will be anxious soon to take the step up the ladder to Analyst/Programmer.

Systems Programmer (Ref.126)

Good VM experience essential. Knowledge of DOS/VSE and DL/I would be a significant advantage.

The Rewards

The rewards in terms of job satisfaction will be very special. Working for a "growing company" can add a new dimension to job interest. The rewards in salary terms are excellent and these, coupled with the benefits one would expect from one of the world's major airlines, offer a very exciting prospect.

The Recruitment Time Schedule

British Caledonian wish to fill the vacancies advertised quickly. Therefore, you are asked to send a curriculum vitae which will allow us to measure your experience against the positions offered. Interviews will be conducted during the next two weeks. Please apply, giving contactable telephone numbers, to A&A Consultants (Holding) Ltd, County House, 10 Little Portland Street, London W1N 5DF. Telephone 01-631 4184. Kindly quote appropriate Reference Number.

The Company

The Company is Britain's most successful independent airline. With their headquarters at Gatwick in Sussex, they have developed one of the most impressive and sophisticated computer installations.

The Career opportunity

The career opportunity presented here could be exceptional. British Caledonian expect all members of their Computer Group to progress, and in this exciting and technically advanced environment the opportunity presented is considerably better than average.

The Installation

Using Dual IBM 4341 mainframes plus significant other hardware, British Caledonian has developed a highly technically competent installation.

The Vacancies

All the vacancies are new ones and stem from the desire of senior management to see continued growth in the use of computing within the company.

British Caledonian Airways



الرجاء انظر

RPG II/III

IBM SYSTEM 38 To £12,500

W/END. Superb opportunity to join this highly professional finance organisation based in the heart of the West End. As a key member of a small team you will be responsible for development of Accounting and Insurance Systems. You will be given every opportunity to increase your analytical skills. Excellent working conditions, including air conditioned offices and free lunches. REF G/2634

RPG II/III £12,000

MIDDLESEX. Senior position for an experienced IBM System 34/RPG II Programmer/Analyst to play a leading role in a major conversion project, which will involve a lot of user contact and liaison with senior managers. Once the project is completed you will receive RPG III training and work solely on the IBM System 38. REF G/2611

IBM SYSTEM 34 £10,000

LONDON/HERTS BORDERS. 1 year's IBM System 34/RPG II experience is all that is required for this major group of companies. The successful candidate will be involved in many varied and challenging development applications, including training in analysis, and liaison with non D.P. users. You will be well rewarded in terms of salary and perks. REF G/2635

ANALYST/PROGRAMMER To £12,000

LONDON. Highly reputed firm of commodity brokers based in the City requires an RPG III Analyst/Programmer who will be a key member of a small on-line development team, who are embarking on a large financial project. If you seek a challenging position this could be an ideal career move for you. Perks include £5 per week L.V.s and interest free season ticket loan. REF G/2590

IBM PL/I c. £9,500 + Mort

CITY. Excellent opportunity to widen your experience with this major banking concern. If you can offer 12 months + IBM MVS or OS/VS1 experience with fluency in PL/I programming language, they will offer you full training in Database techniques, and all aspects of systems design. A full banking package is offered which includes mortgage subsidy. REF D/2631

PL/I-TRAINING IN CICS £GOOD!!

This highly successful Kent based PL/I site is expanding and is currently seeking programmers with a minimum of 12 months PL/I experience. The majority of work is of a development nature and will involve the successful applicant in much user-contact. The successful applicant will be given training in CICS and the opportunities to improve and utilise their skills. The company offers many financial benefits including low interest mortgage, bonuses, and non-contributory pension scheme. REF D/2632

IBM OPPORTUNITIES

COBOL PROGRAMMER To £9,500

MIDDLESEX. Excellent opportunity for a programmer with 18 months + IBM COBOL, to gain on-line experience with this prestigious world-wide organisation in Middlesex. Current configuration is an IBM 4341 under OS/VS1, with IMS coming in shortly. You will be an integral part of a development team working on financial and commercial on-line projects, using structured programming techniques, and benefits include discount on goods, car scheme and subsidised restaurant. REF G/2440

ANALYST/PROGRAMMERS To £11,000 + Relocation

ESSEX. Due to continued company expansion, this leading financial concern are seeking to recruit additional IBM Analysts/Programmers to join their D.P. Department that is currently involved in significant development projects. The company house an IBM 4341 running DOS/VSE & CICS. Working knowledge of VSAM would be an asset. The ideal applicants will be highly motivated and prepared to take up a challenge. The company offer excellent working conditions which includes non-contributory pension scheme, BUPA, Active sports and social club. REF G/2495

IBM PROGRAMMER £10,000

CITY. An international organisation is currently seeking an IBM COBOL programmer with a minimum of 2 years' experience. The company retain an IBM 4341 running under MVS and CICS. You will be solely involved with on-line development work, and CICS experience would be useful. You will enjoy a variety of benefits including flexitime, L.V.s and S.T.L. REF G/2435

THE INTELLIGENT CHOICE

Brushfield House, 12 Brushfield Street
Bishopsgate, London B1 6AN
Telephone: 01-247 3356 (24 Hours)

PROGRAMMER/ANALYST £10,500

LONDON. An exciting opportunity for an IBM COBOL Programmer to become immediately involved in the development of an on-line database commercial project. You will be working on an IBM 4341 running under DOS/VSE, CICS & PL/I expertise is an advantage although training can be provided where necessary. Package includes non-contributory pension scheme, free life insurance, substantial twice yearly bonus, and active sports and social club. REF G/2635

OTHERS

HEWLETT PACKARD - SENIOR c. £12,000 + RELOCATION

An excellent opportunity has arisen for a Hewlett Packard programmer to move into analysis. This high technology company based in Bucks, seek ambitious persons with experience of H.P. IMAGE, VIEW and/or structured systems analysis techniques. Many new development projects are anticipated for the future, following the installation of a new network of HP3000 machines. Applications include Sales Order Processing, Distribution and Export. The company offers an attractive salary and package which will include relocation. REF A/2561

HEWLETT PACKARD-COBOL £10,000

Can you offer in excess of 6 months commercial HP3000 COBOL experience? My London based client can offer you the chance to become extensively involved in on-line development projects of an extremely challenging nature. You will have much user contact and will soon be completing your own analysis duties. The opportunity also exists for you to learn a new language. REF A/2531

HONEYWELL - ALL LEVELS To £10,500

My Essex based client is seeking Honeywell mainframe COBOL expertise at all levels from Programmer to Senior Analyst/Programmer. 18 months + relevant experience is required. The successful applicant will be involved in a financial/commercial environment. The major sector applicants will immediately be involved in challenging database development projects, including complex systems design work. The programmers will be encouraged to move into analysis work by writing their own specifications for interesting on-line development projects both of a commercial and financial nature. Benefits include 5 weeks' holiday; subsidised restaurant; company car; non-contributory pension scheme and social club. REF A/1712

HONEYWELL MINI-COBOL/SCREENWRITE To £10,000

This London based Honeywell L6 site would like to hear from L6 Programmers within excess of 12 months COBOL and/or Screenwrite experience who wish to further their career in a financial/commercial environment. You will play an integral part in a team developing new real-time systems for the company's use. There will be much user contact and the chance to progress into analysis. For this and many other L6 positions call now quoting: REF A/2568

DEC/PDP-BASIC + 2 c. £9,500

This prestigious multi-national company utilises the latest technology to administer its manufacturing and commercial projects. To assist in the development of highly sophisticated systems an additional Programmer/Analyst is to be appointed. Ideal candidate should have a minimum of 12 months' DEC/PDP BASIC + (2) exp, hopefully not essentially with RSTS/E. You will also be trained on another mainframe. Company is based on the London/Middlesex borders. REF A/1249

COBOL - RETRAIN LATEST EQUIPMENT To £11,000

Excellent opportunity for COBOL Programmers to retrain onto the latest Honeywell kit. Due to expansion, my Surrey based client seek applicants with upwards of 2 years COBOL experience hopefully with knowledge of structured programming. Preference will be given to those with on-line experience for database backgrounds. They are currently embarking on a series of financial development projects using the most recent programming techniques. There is a degree of analysis involved and the successful applicant will have regular user liaison. Company benefits include a non-contributory pension scheme, L.V.s and 5 weeks' holiday. REF A/2359

DEC - RETRAIN TO IBM! c. £9,000

Exciting opportunity for a DEC/PDP BASIC + 2 programmer to be retraining almost immediately on a new IBM 4331 using CICS. You will be required to complete some maintenance on the DEC, whilst developing projects on the IBM. Applications include Order Processing, Management Information, and Ledgers. London-based, my clients offer a good career path, excellent salary and extensive training. REF A/2360

BURROUGHS - COBOL To £12,000

A semi management position exists for a D.P. professional with in excess of 3 years solid BURROUGHS COBOL expertise, preferably with having done some systems work. You will be reporting directly to the Financial Director and will take responsibility for a large area of the department, running a sophisticated Accounting System. Liaison with users will play a large part of the job as will management liaison. A good salary is offered and benefits include free life insurance, BUPA, lunches and excellent working conditions. REF A/1010

ANALYST/PROGRAMMER c. £9,500

BERKS. Superb opportunity for an experienced and enthusiastic programming professional with three years ICL COBOL, including one year as an Analyst/Programmer to take up a key position within this major manufacturing company. The successful candidate will be joining a busy development team, working directly with user groups to design, write and implement a range of commercial systems. The work will be based on ICL 2956 and ME29 hardware. Good prospects to move into analysis, and to increase technical expertise. Company benefits include 5 weeks holiday, free life insurance and pension scheme. REF D/2633

Z80 FIVE FIGURES!!!

Highly successful West End based bureau concern is currently seeking experienced Data Processing professionals with considerable experience of ASSEMBLER on Z80/6502 micro hardware. The successful applicant will be developing a range of financial, banking, and commercial applications. This is an outstanding opportunity that offers a full benefit package and very high salary for the right person. REF D/2348

MAJOR ICL DEVELOPMENTS c. £9,500 + Mort.

SURREY. This Surrey based insurance concern currently in the process of developing new systems are offering interesting work to programmers and analyst/programmers who can offer in excess of 18 months' ICL COBOL experience. Experience of VMB would be desirable, and will be rewarded accordingly. Full training offered in database techniques, TP systems, and aspects of systems design. This is an excellent opportunity to gain varied and practical experience while pursuing a worthwhile career. Company benefits include 4 weeks' holiday, subsidised restaurant and pension scheme. REF D/1739

DATAPOINT OR TEXAS INSTRUMENT £9-13,000

Two outstanding opportunities with London and Midlands based software houses. One requirement is for a Datapoint programmer with Database and Datasource experience to develop commercial and communications systems. The other for a COBOL Analyst/Programmer with Texas Instruments or other main COBOL experience. Full company benefit package and good career prospects for the right people. REF D/2615/4

SYSTEMS ANALYST £11,000

ESSEX. Large progressive company based in Essex housing ICL 2956 is seeking an experienced analyst with one or more years' formal analysis experience and should be able to demonstrate skills in either the financial, commercial or technical sectors. VMB exposure would be preferred but is not essential. The successful candidate will also have the ability to liaise with users at all levels. Ideal opportunity to join a challenging, dynamic but friendly team. REF D/2636

FORTRAN - PDP £NEG

Can you offer a minimum of 2 years' FORTRAN expertise on DEC/PDP equipment? You will become involved in the development of engineering and scientific projects, using FORTRAN. Extensive training in FORTRAN, REXX, PL/I, CPM, UNIX and MACRO 11 if required. Kent based, my client is seeking Programmer/Analysts with the desire to move into systems work in the near future. Salary will increase commensurate with your experience and other benefits include London Club, sports/social facilities. REF D/1159

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UNIVERSITY OF CANTERBURY

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Applications are invited for the above position in the University's Computer Centre. Applicants should possess at least a 2nd Honour degree in Computing or a related discipline. Experience with any of the following systems: PL/I, FORTRAN, COBOL, BASIC, and applications packages would be an added advantage. The duties will involve maintenance of applications packages, and will involve interaction with users. There will be some participation in a variety of development projects.

The salary for Assistant Programmer-Analyst is on a scale from NZ\$11,125 to \$16,722 and for Programmer-Analyst on a scale from NZ\$13,585 to \$25,044 per annum.

Further particulars and Conditions of Appointment may be obtained from the Association of Commonwealth Universities (ACU), 38 Gordon Square, London WC1H 0AP.

Applications close with the Registrar, University of Canterbury, Private Bag, Christchurch, New Zealand, on 28 August 1983.

General Microcomputer Systems Limited

548 Chiswick High Road, London, W4 6RG Tel: (01) 996 4638

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Ideally the applicants will have experience in selling to large organisations. We will, however, also consider applications from graduates who feel that they would like to gain this challenging and exciting career. Necessary training will be given.

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An experienced PASCAL programmer who will be capable of rapidly accepting responsibility for a major project. The system currently runs on a microcomputer network and is written in UCSD Pascal. Planned developments include transferring and upgrading the system on to a suitable Mini-computer.

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Please send full details to the following address:
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COMPUTER PROGRAMMER

An opportunity exists for an experienced RPG II programmer to become involved in the future development of data processing within the M.V. Group of companies.

We are currently operating two IBM System 34's which provide a service for many of the companies within the Group - three of which are on-line. Suitable candidates must be able to get on with people in a busy department. The successful applicant will be involved in many varied and challenging applications and be rewarded with an excellent salary reflecting the importance placed on this appointment.



Please write or telephone:
Mark Paxton,
M.V. Dept. c/o J.C.
Moxon Street,
Barnet, Herts, EN5 8TR
Telephone: 01 440 8441

SOFTWARE HOUSE DEVELOPMENT OPPORTUNITIES

£8,000 to £16,000

CENTRAL LONDON & HOLLAND

One of the UK's largest and most prestigious software houses has a requirement for additional development personnel resulting from its continued sales success. These opportunities are for good technical staff of various levels of skill to work in a development capacity on a variety of large commercial projects.

Our client offers the following major advantages to DP Professionals considering a career move at the present time:

- real career progression within one company at both technical and a managerial level.
- Involvement on meaningful development projects of critical importance to client companies.
- A stimulating and professional environment with excellent training in up-to-date methodologies.
- A wide variety of commercial applications primarily with a real-time or on-line bias.
- Financial rewards throughout the company which are excellent and with a benefits package in line with the best in the software house industry.

PROGRAMMING MANAGERS to £16,000

Based in Central London you will have successfully managed large programming teams, developing commercial applications using COBOL. You will have a real sense of urgency about your work with the ability to set and meet tight deadlines. Your experience will include modern techniques, such as Structured Programming methodology, and have produced work of a good quality.

Considerable opportunities exist for both technical and personal career progression.

DATABASE DESIGNER to £15,000

An additional Database Designer is required for projects based in Central London. You will possess good technical skills in addition to practical database design experience. You will possess knowledge of at least two different Codasy! Database Management Systems, possibly including the HONEYWELL IDS System. Initially you will work as a member of a team on a major project. However, for suitable applicants with the proper potential there is the opportunity to progress to the level of Database Consultant.

COBOL PROGRAMMERS to £10,500

Several additional COBOL Programmers at various levels are required for major on-line development projects. In addition to good COBOL skills you will have had exposure to on-line working either as a development aid or in an applications environment. You will be used to working as a member of a programming team in a formal environment utilising good programming standards. All Programmers will function in a development capacity utilising a range of the latest hardware and processing techniques.

Several opportunities also exist in Holland for COBOL Programmers. In addition to the normal rewards, a generous overseas allowance is paid. The environment will include other expatriate English speaking staff, thereby making the personal transition easier.

MANUFACTURING PACKAGE SUPPORT c.£15,000

An opportunity exists for an applications specialist with considerable exposure to manufacturing systems to support production and manufacturing packages. The position is London based but travel will be required to customers' sites as necessary. The successful applicant will have several years relevant experience which should include at least some of the following:-

- Bill of Materials
- Manufacturing/Shop Floor Control
- Materials Requirement Planning
- Inventory Control and Costing

In addition to implementation work you will also carry out sales support. Clearly any package experience in an installation and support role would be considered highly advantageous but for a good Analyst with the correct experience this is not essential.

RESPOND NOW

Telephone our Advising Consultant LEN CRAY on 01 439 8985 during office hours or send your C.V. to him at the address below. Alternatively telephone him on 0484 21482 during evenings and weekends.

(4754)

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COMPUTER SERVICES



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Operations Support for a Major Financial Institution with 6 x IBM 3081s

Our client, a leading financial institution with very extensive hardware resources, is constantly making use of all the latest software/development aids and seeks to employ six qualified personnel in the area of Operations Support.

Successful candidates will join a team of operations support specialists based at our client's data centre in London. They will be primarily responsible for installation of applications, systems software, new releases, etc., for the writing of operations procedures and JCL and for the evaluation of new products.

If the work sounds attractive, then consider the following criteria to see whether you are someone who should apply:-

- At least 4 to 5 years experience of working in operations and/or operations support at a large IBM installation (370/, 303X or 308X series machines)
- A good understanding of IBM JCL and utility software
- A thorough knowledge of the MVS operating system together with JES2 and/or JES3
- Preferably be conversant with IMS, MTO/recoveries and use of TSO
- Aged 23 to 35'ish

Now you can see that you are a perfect or almost perfect match, consider the other attractions:-

- A salary ranging from £7,700 to £11,450 including London weighting allowance
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15/17 City Road, London EC1Y 1AA. Telephone: 01-638 8411 or 01-920 0801 (24hr)

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Please send your Curriculum Vitae or telephone Lynn Roylance for an application form

(4800)

ENGLEDOWN

COMPUTER PERSONNEL CONSULTANTS

ANALYSTS/ PROGRAMMERS £8,000~£13,000

Our client, an enlightened people minded organisation, based in a highly attractive part of the West of Scotland, is looking for Analysts/Programmers who can fit into a team environment and who have a lot to offer.

You should have 2-3 years experience in the Analysis and Design of either Commercial or Manufacturing Related Systems, allied to good programming skills. Experience of BASIC + 2, RSTS, VAX, VMS, COBOL and BASIC would be advantageous as would a knowledge of database management. Full training will be given in languages and hardware as required.

Our client's philosophy is one of flexibility, and your personal skills and

experience will be tuned into the sector that suits you best.

Above all, to succeed with our client, you've got to be career minded, positive and have the ability to make an immediate and positive contribution to their overall success.

You'll become an important member of a truly professional team, enjoying a top flight salary, excellent benefits, and the prospect of working on varied and challenging projects.

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Please write with full details quoting Reference 5/1293 to:

The Manager,
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Trafford House, Chester Road,
Manchester M32 0RS.

Letters from individuals will be opened, acknowledged and forwarded to our client. Please list in a covering letter companies to which your application should be sent. Open to male and female applicants.

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£9,000 to £14,500 + Profit share

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Suite 14, 98 St. Martin's Lane, London WC2

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CITY £13,000
Our client, a prestigious financial management organisation who currently utilise the services of a bureau, now wishes to recruit their own in-house COBOL Analyst/Programmer who has around 4 years' experience, of which 2 years has been spent in Systems Design, writing interactive applications, liaising with users, and using IBM DATA BASE TECHNIQUES.

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As well as a proven technical background, you must have the ability to produce VERY HIGH STANDARDS OF DOCUMENTATION.

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(4828)

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RPG II PROGRAMMER

required for a three month temporary assignment. Applicants should have practical experience of work on IBM RSD equipment. Employment will be considered on whole or part-day basis.

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Computer Service SYSTEMS DESIGNER Up to £14,000

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We operate an IBM 4341 with DOS-VSE, CICS and COBOL. An IBM 3083E is planned for 1984. Personal computing facilities are increasingly in use.

The majority of our work is new development, encompassing a wide variety of challenging systems, including finance, housing, libraries, planning and law.

We are currently seeking a Systems Designer for one of our three development teams. Reporting to the Project Manager, you will be involved in all aspects of project development including analysis and design, technical supervision and reviews, and implementation and documentation, using BIS Structured Methodology.

You should have a minimum of 5 years in Data Processing, preferably in an IBM environment, with at least 3 years' COBOL and some analysis experience. You should be able to communicate with both technical and user staff, and supervisory experience would be an advantage. A local authority background, while useful, is not essential.

We offer a competitive salary, 28 days' leave, interest-free season ticket loan after qualifying period, subsidised restaurant, flexible working hours and excellent training facilities. We are conveniently located in modern air conditioned offices close to Kensington High Street.

For further details ring Ken Batchelor on 01-937 5464 Ext. 336.



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KENSINGTON AND CHELSEA**

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TRIAD Computing Systems Limited
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Systems Programmer

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East Midlands Electricity operates a 18 megabyte 3083B and a 12 megabyte 3033N IBM Computer using the MVS/SP 1.3 Operating System.

Other software includes CICS for teleprocessing, TSO for program development and personal computing, and the IMS/OLI database management system. A network of over 350 terminals is supported.

The successful applicant will be required to work in a small team specialising in the implementation and tuning of manufacturers' software and the design and development of utility routines and programs. Sound and proven ability in Assembler and/or COBOL languages is required. Some knowledge of IBM Operating Systems and Utility software will be an advantage. Initial salary will be based on experience and will be supported by attractive fringe benefits.

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IBM Systems Programmers

£6,000-£15,000

Our Client is based in one of the most picturesque parts of rural Cheshire.

The Company is embarking on a major expansion of their Data Processing function, and require additional systems programmers with a sound technical background, preferably in an IBM MVS environment.

Positions available range from trainee to management level in the company's technical support section.

Candidates applying for the senior position will have a minimum of six years' systems programming experience with a proven track record of man management, essentially in an IBM MVS environment.

THE INSTALLATION

IBM 3031/3083 MVS/SP with 250 terminals online

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Our client, a major IBM user, wishes to fill the important position of Systems Project Leader in their growing Management Services Group. They are looking for someone with good all round systems development experience. Someone who has worked in a manufacturing or an engineering development area would be a particularly attractive candidate. However, more important is the ability to cope with both systems and people in a pressurised environment.

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If you are anxious to develop your career significantly then send your curriculum vitae to A&A Consultants (Holding) Ltd, County House, 10 Little Portland Street, London W1N 5DF. Telephone 01-631 4184. Please quote Ref. No. 301.

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Successful applicants will have had a minimum of two years COBOL experience on IBM machines. Knowledge of CICS, DL1, COPICS or ADABAS would be an advantage but this is not essential.

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You should be prepared to work either in our offices in the City or on the premises of our clients, most of whom are located in the London area.

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Please contact **PHILIP TAYLOR** on 01-253 2196 to discuss a possible appointment, or write sending brief details of your career to date. Under no circumstances will your present employer be approached without first obtaining your permission in writing.

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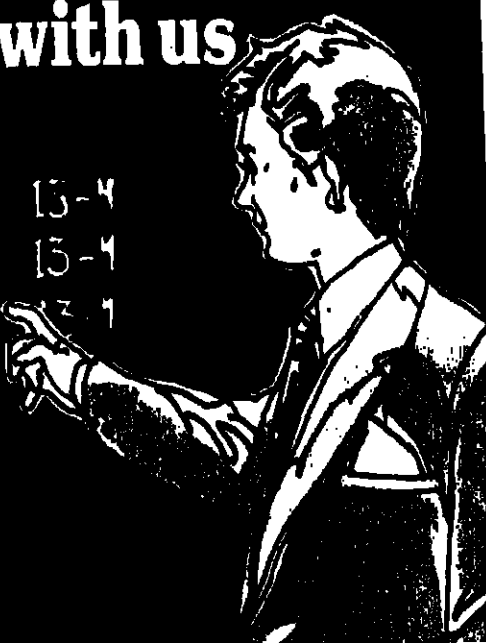
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We have grown fast because we have top quality products and services... and we are looking for high quality lecturers to train our customers and staff in computer software - ensuring the continuation of that quality in the future.

The positions are based in Systime's new headquarters in Leeds - a superb purpose built manufacturing and administrative building which offers a first class working environment. Training in presentation and communication skills will be given where necessary, and there are excellent career development opportunities.

Very attractive negotiable salary with big company benefits.

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To train customers/Systime staff in programming/analysis skills and system software.

You should be mid 20's - late 30's, ideally degree level, and have experience in lecturing or training in the computer industry/education, or in software development/support and good communications skills. An RSTS/VMS background is a strong advantage.

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SYSTIME

Rise to the challenge of Systems Development

The West Midlands Passenger Transport Executive is a leading Public Transport undertaking with a fleet of 2,000 vehicles and a total of over 8,000 employees. We have embarked upon an extensive programme of applications development, including on-line and database systems. We use an ICL 2988 running under VME 2900 and a 2960 running DME/George III. In addition, the Executive operates an ME 29 Minicomputer using TME. We are currently developing a complex telecommunications network based on Local Area Network technology designed to provide local processing facilities at sites throughout the West Midlands. The opportunity now exists for experienced computer professionals to work on projects within the development programme.

Technical Co-ordinator £10,393 - £12,048
To control, co-ordinate and advise on the investigation, design and implementation of communications networks incorporating hardware and related systems. A minimum of 4 years technical experience in planning and implementing data communications networks is required, together with experience of ICL communications and FACAL equipment.

Senior Programmer £9,240 - £10,794
To direct and co-ordinate a small team of programmers on the development and maintenance of a wide range of computerised systems. Additionally he/she will contribute towards the development of management information systems. A minimum of 3 years experience of COBOL and ICL hardware is essential and some experience of database applications would be useful.

Programmers £8,571 - £10,006
To join a small team developing and maintaining programs for a wide variety of management and financial information systems, including Database applications. Applicants should have a minimum of 3 years experience of COBOL and ICL hardware; some knowledge of Filetab would be advantageous.

All posts are based in Central Birmingham and carry attractive fringe benefits. Job descriptions and application forms can be obtained from: Personnel Department, West Midlands Passenger Transport Executive, 16 Summer Lane, Birmingham B19 3SD. Tel: 021-622 5161 ext. 41. Closing date for receipt of applications 3 August 1983.

WMTL West Midlands
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The London Data Processing Centre has recently developed and implemented a large DL1 Database system currently being used by the UK branches.

Further development and enhancement of the system is now being undertaken to enable it to be used by the Group's international branches.

Successful candidates will rapidly become involved in this area and several new projects envisaged for early 1984.

CHIEF COBOL PROGRAMMER

to £13,000 + Bank Benefits

As Chief Programmer you will be responsible for co-ordinating and leading a medium sized team of programmers, scheduling work and ensuring standards are maintained. You will advise and assist where necessary and liaise regularly with both users and analysts. Your background should include a sound knowledge of COBOL and experience of DL/1.

COBOL PROGRAMMER

to £11,000 + Bank Benefits

With a minimum of 2 years' COBOL expertise preferably gained within an IBM DOS/VSE environment you could be given the opportunity to join this international bank.

Preference will be given to candidates knowing DL/1 although FULL TRAINING in DL/1 will be provided if necessary.

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47871

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PFS was established 18 months ago as services and consultancy subsidiary of the Euribon Group. We are currently providing project teams, consultancy and individual computer staff to some of the country's leading companies to work on the various installations of differing manufacturers systems throughout the United Kingdom.

If you wish to be associated with a growing and respected company please send your c.v. or telephone the following:

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PFS Computing (UK) Ltd.
Barker Gate House
Belward Street
Nottingham, NG1 1JY.
Telephone: 0602 580935
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Hertz

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Circa £11K

- with
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Based at the modern West London Head Office of Hertz Europe, you will be one of a team of 10 in the Pan-European Development team. Your work will focus on developing and installing systems on overseas T1990s which have communication to our client's Head Office IBM mainframe.

This will entail European travel, liaison with senior user staff, and troubleshooting, within 7 countries covered by the European operation. Project requirements will determine frequency and duration (normally 1 to 5 days) of these trips.

Our client regards personality to be equally as important as the right background in making this appointment. Positive, confident and outgoing, you should have 2 years COBOL on IBM mainframes and/or T1990s as well as having some analysis and user experience. Because of the demands of the job, single status could be an advantage.

To find out more about this exciting opportunity, please call Jeff Boston on 01-830 4041 during business hours or 078087 428 during evenings and weekends.

47841

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COBOL in Surrey

ICL 2900 DEC/VAX Micros

Analyst/Programmers to £11,000

This established Management Services Department is gaining an increasingly heavy volume of work from user departments and is in the process of developing new systems. These will be on a variety of hardware—ICL 2900 mainframes (under VME and DME), VAX 11/780 (VMS) and micro-computers, both stand alone and linked to the mainframes. If you have 3-5 years' experience of COBOL programming and design, gained in a VME, DME or VMS environment, these offer you the opportunity of initial training in appropriate areas and other training as your career develops. There are many benefits in addition to the salary, including assistance with removal expenses where necessary.

For these and other positions please contact Joan Ainsworth on 01-681 8311 or write to her at Computer Search and Selection, 6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey, CR0 9XF.

Senior Programmers to £10,500

If you have substantial experience of ICL COBOL, are a good organiser and can offer leadership skills, this position gives you the opportunity to gain supervisory experience and a knowledge of micros. Training in structured programming techniques will be given where necessary. A knowledge of BASIC could be useful.

Programmers to £9,000

A minimum of one year's experience of ICL STRUCTURED COBOL is required for these positions, one of which will offer training in VAX 11/780 COBOL, as some applications are being converted to an on-line environment. The sports and social club is very active.

Computer Search & Selection

We need more assistance to tackle some knotty problems

Opportunities now exist within an internationally successful organisation to develop high technology display systems at their recently established division in Surrey. Whilst providing the security of a large company the division is small enough to operate autonomously having a young management team which has already created a friendly and dynamic work environment.

SENIOR ANALYSTS TO £12,500 PROGRAMMERS TO £11,000

Young and enthusiastic Senior Analysts and Programmers are invited to join small highly creative design teams utilising the latest techniques on 8086/80286 micro processor hardware.

Ideally you will have experience in some of the following:

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Telephone 01-938 1804 Telex 22861

For further details regarding these vacancies please telephone in strictest confidence
Miles Richards on 01-938 1804 (24hrs) or 01-847 2385 (7pm-9pm).

DRAGON Data Ltd.

Today's Dragon strikes no fear! It does however have the same strength of purpose as the creature of mythology.

Dragon Data Limited is profitable, rapidly expanding and symbolic of that which is best in British Technology. Innovative in the design, development and manufacture of high quality, successful products, it is now a market leader and major exporter in home computers.

New projects are for business, education and other applications using multi-tasking multi-user systems, based on a variety of microprocessors including 6809, 68008 and 8088.

The continuing success of the Company requires additional ambitious, committed professionals seeking the opportunity for projecting their ideas and efforts into a young dynamic organisation.

Project groups are small, dedicated and generally operating to short timescales. This provides considerable challenge, involvement and responsibility.

Applicants of the highest calibre are sought and outstanding salary and benefits will be offered for all posts.

Project Leaders

Applicants will be degree qualified and have several years hardware design and development experience embracing microprocessor based technology. A software appreciation would be an advantage. Leading a project team in addition to significant and demanding project control you will be expected to provide an extensive technical contribution.

Development Engineers

These are excellent opportunities for graduate engineers having a minimum of 2 years in design and development to expand their experience of circuit design across a range of micro based equipment and peripheral devices.

Programmers

Programming skills in Assembler, C, Pascal or a similar high level language is required, and a good appreciation of hardware would also be useful. Applicants should be degree qualified and have considerable experience of application software on microprocessor based devices and systems.

Senior Technical Author

This is an outstanding opportunity for an ambitious Technical Author to join a new and expanding group. Applicants should be degree or HND qualified and have considerable technical and literary skill. Effective communication with the development group will be necessary to produce a wide range of technical, product and operating manuals. To undertake this task, a good appreciation of microprocessor techniques is essential.

The Company is located in the beautiful South Wales countryside, and within 10 minutes drive of sandy bays and beaches. Housing in the area is attractively priced and plentiful. Excellent motorway links to the cities of Swansea and Cardiff and the amenities within commuting distance. A comprehensive relocation package will be available where appropriate.

Please apply providing a full C.V. to Barrie Witt or Digby Dyke, Dragon Data Ltd, Old Bank House, Bank Street, Worcester, WR1 2EW. Alternatively further information or an application form may be obtained by telephoning: Barrie Witt or Digby Dyke—0905 611512 Office hours or 06845 66477 and 06845 2210 Evenings and Weekends.

Computer Personnel & Executive Development Associates Ltd.
Old Bank House, Bank Street, Worcester, WR1 2EW

Philip Hunter traces an interesting development in the contract market

Are the contractors starting to squeeze out the agencies?

CONTRACT agencies are now finding themselves squeezed between contractors who are demanding more money to at least keep pace with inflation, and clients who have imposed a freeze on charge out rates.

For many this will seem a good thing. The agencies have long held a near monopoly of the contract market, and many contractors and clients alike feel they have been taking too much of the cake.

But now, as the contract market shifts its axis to more specialist computer applications, it is more and more the contractor who is calling the tune. And at the same time clients are demanding more of their contractors.

Contract agencies operate by charging a fee to a client for a contractor's services, taking out their cut, and passing on the rest as a weekly, or sometimes monthly wage. Traditionally this cut was 25 to 30% of the fee.

Now it varies more, but has come down on average to around 22%. VNG Professional Services, which does a lot of business in the North of England, now takes an average 18%, and for clients which nominate it as one of two or three preferred suppliers, the cut is not much over 10%.

Agencies have also come under attack by a National Computer Contract Directory, set up by Wilkew. This abolishes the agency fee by putting contractors and clients in direct contact. It has achieved modest success, but some clients are deterred from using it because it involves more work sifting through curriculum vitae and

organising terms of contract.

Clients usually take on a contractor for one of two reasons. Either it is to fulfil peak demand such as when a project is in full flight, or it is a stopgap measure while the search for a permanent person goes on. Some companies also use contractors to give more immediate control over staff numbers.

For some companies the recession has eased this year, and this has meant that projects suspended in purgatory have come in from the cold. Hence a need for more contractors, especially ones skilled in systems programming, real-time software and IBM CICS.

The improvement in the market reported earlier this year by some agencies in the south east of England is now being repeated in the North, but in the Midlands the slump continues. Previous big employers of contractors there like British Leyland and Lucas are still not taking people, although with car sales hitting the roof, there is a good chance of improvement.

Some agencies recognise the importance of the provinces as business picks up. VLI, the UK's biggest agency, recently invited aspiring local contractors and permanent programmers, analysts and operators to a busy meeting in a Bristol pub.

"We see a need to hold these events in outlying areas where people cannot walk through the doors of our agency offices," says Lee Walkinshaw, managing director of three VLI companies, Computer People South, Midlands and North.

Some Bristolians might resent their cosmopolitan city being called outlying, but anyway 130 people turned up to see what contracting was all about, or maybe for the beer.

They had the usual cross-section of fears, says Walkinshaw. Were they good enough, and would they keep in work?

The answer to both questions depends on the type of skills. CICS, online, real time, database, that sort of thing, are in vogue, says Walkinshaw.

IBM has 60% of the contract market, Walkinshaw points out, which is more than its share of the computer market itself. "The man who's bought IBM is prepared to spend more money to get what he believes is the best," says Walkinshaw. And the best often swim in the contract pool, where the water is deepest.

Another quality required of a contractor is tact, insists Walkinshaw. "The contractor has to be something of a diplomat. He has to be able to function like a chameleon and do just what the client wants. It is no good for people who want to change the world."

It is getting harder to place junior people in the contract market. "The day has gone when you can place a contractor with just two years experience," says Walkinshaw. People are having to spend more time picking up experience in permanent work before blazing the gold-laced contract path. But if your skills are highly coveted, like CICS, then you can turn contract sooner.

And the market for operators has steadied after declining about two years ago. Many agencies do not bother with operators, but VLI, KPG, Knight Computer Services and Trident all do. More of the contracts for operators are now with distributed minicomputer systems, but there is still work at traditional mainframe sites.

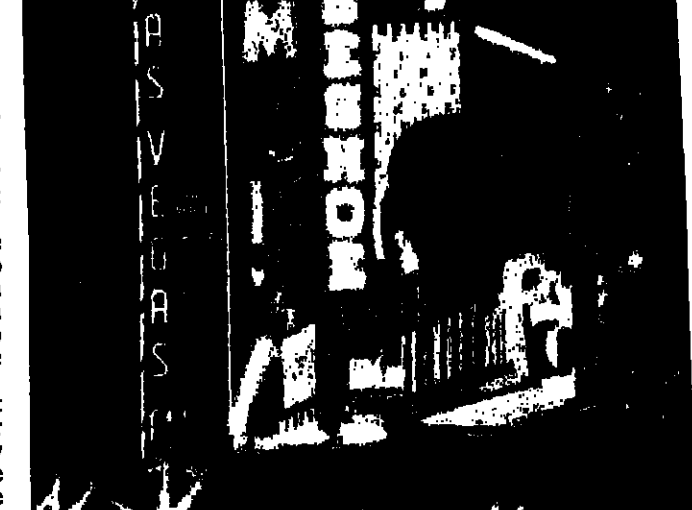
Overseas, the boom area is the US, where people are reluctant to cover the vast distances in search of contract work. More American companies are therefore coming to the UK when a lot of staff are wanted at short notice.

VLI has opened a permanent office in Kentucky to look after one single account with a company called Capital Holdings. There are still 65 contractors working there 18 months after the first 60 people went out. The problems of immigration to the US can usually be overcome in weeks on big projects involving the bigger UK agencies and US corporate clients.

Trident is also picking up a lot of business in the US, and contracts manager Steve Whiting confidently predicts that in 12 months it will be as big as the UK operation.

Again IBM is the biggest market, but unlike the UK, there are many opportunities for Univac programmers. Univac has beaten IBM to several enormous defence contracts in the US, and Trident will shortly announce the dispatch of a big consignment of UK contractors to one of them.

There are still contracts to be had in the Middle East, but they are less lucrative than they were,



LAS VEGAS... And the US can be bright for UK contractors.

partly because of the return to fiscal reality there that has accompanied the fall in world oil prices.

In Europe the contract market has declined, particularly in Holland where many companies used to hire foreign contractors to bypass the Dutch industrial relations act which forbids domestic contract labour.

Back in the UK, ICL contracts are flowing in fast. This follows the draconian staff cuts at ICL that came with the management changes of two years ago. The company was left with mere skeleton cover and has since resorted to contractors to make up project teams.

Meanwhile, many of the redundant ICL programmers have

Did you know?

The longest continuous bagpipe solo was 50 hours, performed in 1969 & Trident are best for contracts!



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BURROUGHS DMS2 COBOL 74 An/Progs.
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IBM COBOL CICS DL1 An/Progs.
ICL VMEB IDMS TPMS Progs.
ICL ME29 TME TP COBOL An/Progs.
ICL ME29 TME Analysts & Progs.
PDP RSX CORAL Progs.
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UNIVAC OS 3 RPG II Progs.
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IBM OS MVS Ops.
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HOLLAND

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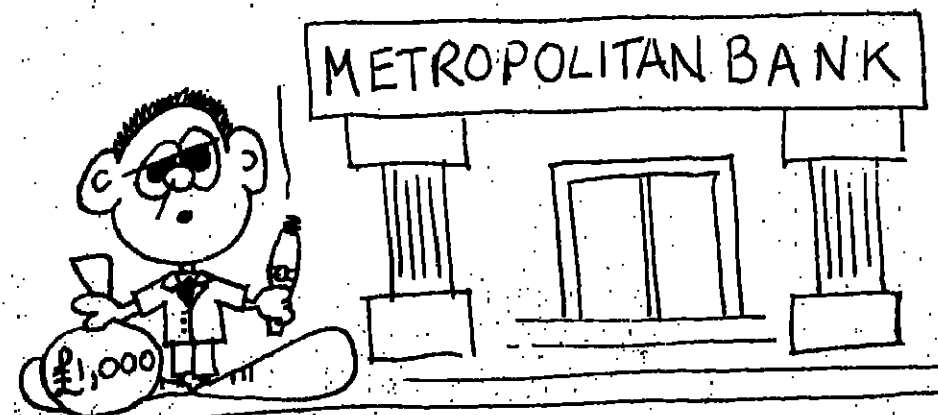
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Contact: FRED BRAMLEY

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Financial Systems Sales Executives, target earnings £25k Ref: F81
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Surrey to £15k + excellent benefits Ref: J159
IBM Sys 34 RPG II An/Prog. c £10k, City Ref: J169
ICL COBOL Progs. Surrey/Middlesex to £9.5k Ref: J163
Honeywell Progs. or An/Progs. with IDS and TDS, Surrey, to £11k Ref: J163

Contact: PETER JEZEPEH for an immediate confidential interview or write, enclosing a detailed c.v.

(4776)

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TASKFORCE is currently seeking to recruit large numbers of contract professionals for several southern clients - particularly in London but also in Berkshire and Birmingham.

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SYSTEM 34 RPGII MAAPICS SYSTEM DESIGNER/ANALYST PROGRAMMERS
SYSTEM 36 RPG III ANALYST/PROGRAMMERS - VARIOUS
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MVS COBOL PROGRAMMERS - SOUTH COAST
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(4030)

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Our Croydon Office is now fully established and we urgently need to hear from contractors who are wishing to work in S. LONDON, KENT, SURREY, SUSSEX, HAMPSHIRE & WILTSHIRE.

Register now with John Edwards at Allstair Singleton at Computer Search & Selection, Carolyn House, Dingwall Road, Croydon, Surrey CR9 2YK. 01-601 6311

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Select Opportunities

Our aim is to offer the very best career opportunities available. Our clients are among the best in the computer industry, covering all aspects of computing from commercial DP to leading-edge technology.
Here are some of our most urgent requirements.

Systems Programmers/Software Engineers £8-£15,000

For a variety of data communications, office communications and software tools developments.

Applicants should have a degree in computer science, electronic engineering or a similar discipline, together with a minimum of two years' development experience in real-time applications.

Hardware Development Engineers/Project Manager £8-£15,000

To develop microprocessor-based telecommunications and data communications systems. Applicants should have knowledge of INTEL and/or Motorola hardware, together with Assembler and PL/M or a similar high-level language.

Technical Authors £7-£10,000 + benefits

To join a prestigious minicomputer manufacturer currently engaged in the development of systems software for operating systems, communications and compilers. Applicants should be experienced in the design, scheduling and preferably production of software and hardware user manuals. This is a real opportunity to progress to team leadership.

These are only a selection of the many genuine career opportunities we have on offer. If your experience does not match any of these appointments, but you are considering a move, please call us—we may well have the right opportunity for your particular blend of skills and talent.

Analyst/Programmers —Senior Systems Analysts to £15,000 + benefits

To join a leading systems and programming consultancy involved in the development of a variety of financial, commercial and local authority applications. Applicants should have a minimum of three years' programming experience, preferably on ICL or IBM hardware.

For the senior appointments, an extensive systems analysis background is essential.

COBOL Programmers £6-£12,000 + benefits

To join a leading Life Assurance Society based in Milton Keynes. Applicants should have a good educational background, together with a minimum of two years' COBOL programming experience, preferably on Univac 1100 systems. Experience of Univac 1100 Assembler and real-time systems would be an advantage.

Lecturers £11-£13,000

To join a training organisation specialising in the presentation of courses in commercial applications, including COBOL programming, systems analysis and database design.

Applicants should have a sound DP background, preferably gained in an ICL or IBM environment.

Previous training experience would be an advantage but much more important is the DESIRE TO INSTRUCT, as full guidance in the preparation and presentation of course material will be provided.

Contact Edith Watson, Computer Search and Selection, Hamilton House, Marlowes, Hemel Hempstead, Herts HP1 1BB.
TEL: HEDEL HEMPSTEAD (0442) 40761.

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PUBLIC SECTOR APPOINTMENTS

Data Processing Manager

Grade PO 3 (J)
£15,630-£16,950 inclusive.

Following the promotion of the postholder to a Chief Officer appointment with another London Borough, the Council is now inviting applications from persons who have had extensive experience at a senior level of Local Government computing. The Council has a twin IBM CPU installation with over 100 terminals and a substantial workload for all departments of the Council and the London Borough of Richmond. The complement of computer staff totals 50. Current developments include a variety of systems on the main frame, growing use of personal computers and the possible development of a Private Viewdata System.

The Computer group is a separate division within the Borough Treasurer's Department and the postholder will lead and manage the group as well as serve as a member of the Treasurer's Management Team.

The appointment calls for a high level of management skill and the successful applicant will be expected to take a positive role in developing computer services for the Borough.

Application forms from the Administrative Officer, Borough Treasurer's Department, Civic Centre, Lampton Road, Hounslow TW3 4DN. Tel 01-570 7728 ext 3372. Closing date: 12 August 1983.



APPLICATIONS DEVELOPMENT OFFICER

Salary up to £9,300

Your responsibilities will include the installation and maintenance of microcomputer control systems for the management and administrative functions of a large Service Department and to evaluate and identify suitable software for such systems. The Authority's main computer services are provided by ICL mainframe computer and you will be expected to liaise with Computer Development Sections of the Authority. You must have a background in microcomputers and be currently working with a manufacturer of major software house and possess the initiative and imagination to maximise the opportunities and meet the challenge to develop this service.



Teesside Polytechnic

SPECIFICATION OF REQUIRED TERMINALS

Teesside Polytechnic Computer Centre requests quotations for the supply of:

- (a) 28 Line-Segment ADM 5 Visual Display Unit
- (b) 12 Line-Segment ADM 5 Visual Display Unit with RG1000 or GEN 2 graphics capabilities (including manual control of graphics cursor)

Quotations should be given for items (a) and (b) above, and the Polytechnic reserves the right to accept the quotation for one item but not the other.

Details may be discussed with the Head of the Computer Centre: Telephone Middlesbrough 218121 ext. 4118.

Closing date: 18th August 1983.

Delivery is required by September 1983.

Quotation forms may be obtained from: The Supplies/Purchasing Officer, Teesside Polytechnic, Borough Road, MIDDLESBROUGH, Cleveland TS1 3BA.

Development Project Manager

Up to £14,300

Systems Analyst

Up to £11,600

The unopposed computer programme is designed to join the development team, one as Project Manager, the other as a Systems Analyst. The Project Manager will be responsible for the development, management, supervision and control of a large scale on-line T.P. system for which a multi-discipline Project Team is already in operation. Both persons appointed will have had considerable experience in the development of on-line systems preferably within a Honeywell environment.

This is the largest London Borough and we are involved in a comprehensive development programme utilising a Quesada/DRS4 Honeywell computer, together with various other mini and micro computers. Air conditioned offices adjacent to a large modern shopping centre and rapid transport links with central London (17 minutes by rail) and the South Coast.

Salary according to experience will be within the range £13,335-£14,320 p.a. for the Project Manager and £9,657-£11,640 p.a. for the Systems Analyst with a contributory pension scheme and an annual leave entitlement of 34 days. The flexible scheme is in operation.



The City is in the process of overhauling its financial systems by implementing a new city wide financial and management control system based on the purchase of a number of software packages and in house development. Implementation is being carried out by a multi disciplinary team within the Systems Section of the Accounts and Budgetary Control Division and suitably qualified persons are invited to apply for the following post:-

PAYROLL DEVELOPMENT

at a senior level

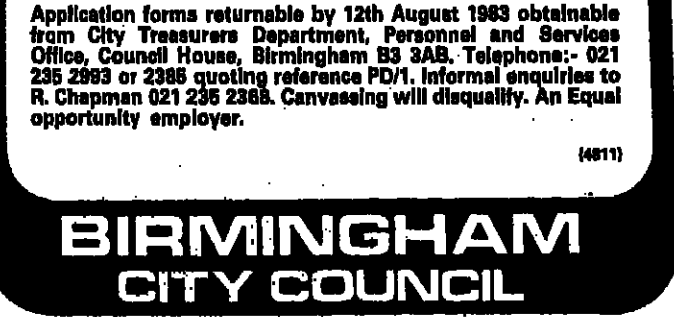
£11,364-£12,738

The City employs approximately 50,000 monthly and weekly paid staff and is about to replace its existing payroll systems with a software package (Q.Pac) supplied by MSA (Management Science America) Ltd.

The duties of the post holder is as follows:-

- Make a major contribution toward the formulation of a development plan for implementation of the new payroll system in conjunction with the Computer Centre.
- Give assistance in examining all existing computer and manual financial systems within the City Treasurers Department as they relate to Payroll. To relate this research to the implementation of the new system which is an on line project system with personnel facilities involving management reporting.
- An involvement in on line systems and personal computing will also be required.
- Ideally candidates should have a wide experience in payroll and/or systems work, preferably in the implementation of Q.Pac in another organisation.

Application forms returnable by 12th August 1983 obtainable from City Treasurers Department, Personnel and Services Office, Council House, Birmingham B3 3AB. Telephone:- 021 235 2393 or 2385 quoting reference PD1. Informal enquiries to R. Chapman 021 235 2388. Canvassing will disqualify. An Equal opportunity employer.



PETERBOROUGH CITY COUNCIL

COMPUTER AUDITOR

SENIOR OFFICERS GRADE 1/2

£9,060-£10,539

Applications are invited from persons with relevant computer experience for this post which is situated within the Audit Section.

The postholder will be responsible to the Chief Internal Auditor, and as the Council is engaged in an extensive and ambitious development programme, the person appointed will be required to expand and develop the Authority's approach to computer audit incorporating both new and existing systems.

The Council has recently installed a range of ICL equipment, including a network of terminals located in most central departments, all are linked to a central ME29 which also acts as a terminal link to an IBM 4341.

In addition to the salary we offer:

- ★ Flexible working hours (37 hours per week) and (in appropriate cases)
- ★ Generous relocation expenses (including solicitors and estate agents fees)
- ★ Housing accommodation or lodging allowance

Application forms and further details available from City Treasurer, PO Box 9, Town Hall, Bridge Street, Peterborough PE1 1HQ, or by telephoning Gulam Sherrall on (0733) 63141 Ext 383.

Completed application forms should be returned by Friday, 12th August, 1983.

TECHNICIAN

(Grade 4)

Required in Department of Land Management and Development, University of Reading, to take responsibility for the day-to-day running of the Department's computing facility. An interest in the development of software would be an advantage. Salary in Scale £5,625-£8,702 p.a.

Application form available from Personnel Office, Whiteknights House, University of Reading, Whiteknights, Reading, RG6 2AH. Please quote Ref: T11A. (4773)

RESEARCH OFFICER

A graduate is required as soon as possible to work on a three-year SERC project to develop software and theoretical techniques for the computer-aided design of nonlinear structures using a PDS computer. The candidate would be expected to have an engineering or mathematics degree with a good knowledge of control engineering and an interest in programming on a CDC. Candidates may be eligible to register for a Ph.D. degree.

Salary will be in the range £3,510 to £7,430 on the 18 scale for Research and Academic Faculty, with commensurate benefits.

Applications, including details of three referees, as soon as possible to Professor D. P. Johnson, School of Engineering and Applied Sciences, University of Sussex, Falmer, Brighton BN1 9QT. (4790)

KINGSTON POLYTECHNIC COMPUTER UNIT

COMPUTING OFFICER

The User Services Section of the Computer Unit provides all the user support for the computing facilities offered at the Polytechnic for both staff and students. The Section's responsibilities include a wide range of applications software, compilers and documentation as well as program advisory and user education services.

There are two vacancies for graduates (in any subject) within range Scale A/6-bar) SO1: £6,861-£9,306 (bar) £10,267.

Further details and application forms (to be returned by 20th August) from Assistant Registrar (Personnel), Kingston Polytechnic, Penrhyn Road, Kingston upon Thames KT1 2EE. Tel: 01-549 1386. (4804)

NEWCASTLE HEALTH AUTHORITY

COMPUTER DEVELOPMENT OFFICER

Are you a specialist in computing with an informed overview of the range of hardware and software options available to potential computer users in the NHS? Interested in helping to shape a more coherent policy for computing in a large teaching Authority? Advice, liaison with University, medical and scientific staff, and opportunities for personal involvement, are all ingredients in this job.

Application form and job description is available from the Personnel Division, Newcastle Health Authority, 3-10 Arnoldcliffe Terrace, Jesmond, Newcastle upon Tyne NE2 1ER. Telephone Newcastle (0922) 815011 ext. 218/218.

Closing date for applications, 19th August, 1983. (4800)

BOX NUMBERS

Box number replies should be addressed to:

Box Number

c/o Computer Weekly
Quadrant House, The Quadrant
Buxton, Derbyshire S18 2AB

Systems Analyst

Salary Scale SO 1/2 (£9,060-£10,539)

The Council is currently in the process of converting work from an ICL 2904 to ME 29/54. When this is complete the next stage of development will include an expansion of on-line facilities, particularly for other departments.

Applicants should ideally have experience of systems work and ICL Hardware/Software.

Assistance with housing may be available, coupled with a contribution towards removal and legal expenses.

Application form and job description available from the City Treasurer, The Guildhall, Cambridge. (Tel. Cambridge 358977 ext 301).

Closing date 19 August 1983

(4838)

City of Cambridge

An equal opportunity employer

Principal Engineer

Management Systems

Salary Scale £13,725 - £15,033

Post No. SM 205

This vacancy arises due to the imminent departure of the present postholder, who with other colleagues is setting up a private company.

In West Sussex, considerable investment has been made in VAX and IBM computers and specialised peripheral hardware for graphics and data collection. Computer use extends from engineering design and drafting through information systems to financial, management and control systems.

You will be responsible for formulating policies for the expansion of computer use and office automation, and for the provision of a computer based management information service.

Under development is a Resource Management System for the administration and operation of the Direct Labour Organisation, and fourth generation software tools are being used to improve development efficiency. This project involves fundamental changes in working practices within the department.

You will need to show considerable management ability and possess an appropriate qualification for this demanding post in a technical environment.

Analyst/Programmer

Salary on a scale rising to £10,539

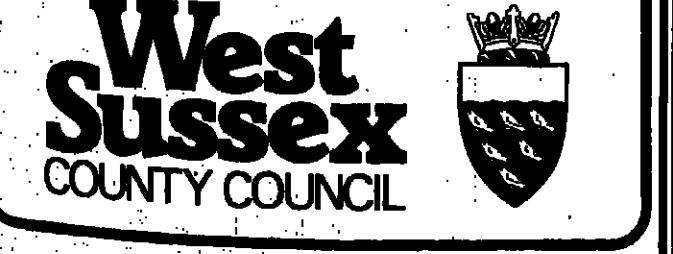
Post No. SQ 102

The successful applicant will work as part of a small team engaged on an extensive project for the administration and control of a direct labour construction organisation.

VAX 11/780 and 750 computers are used together with a fourth generation software development system ADMINS-11 and training in the use of the facilities will be given. Candidates should have 2 or 3 years experience in commercial applications programming using high level languages and hold an appropriate qualification.

Removal, resettlement and lodging allowances are payable in approved cases and temporary accommodation may be available.

Further details and an application form are available from County Surveyor, County Hall, Chichester, West Sussex, PO19 1RH or telephone (0243) 777973 quoting appropriate reference number. Closing Date Tuesday 16th August, 1983.



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Only nationals of the following countries should apply: Brazil, Gabon, Iceland, Iran, Japan, Madagascar, Niger, Norway, Portugal, Rwanda, Seychelles, Singapore, Trinidad and Tobago, Zambia, Zimbabwe.

Applications, quoting reference V/Stat/27/83 and with complete curriculum vitae should be sent to: P/Dev, Case Postale 500, CH 1211 Geneva 22, Switzerland, before 2 September, 1983.

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It is envisaged that these posts will provide permanent employment subject to receipt of annual grant aid from the M.S.C.

Knowledge of Welsh an advantage.
Relocation expenses in appropriate cases.
Application forms and further particulars from County Personnel Office, County Offices, Caernarfon. Closing date: 5 August, 1983.

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SALES BIT

Quality of management - 61

A salesman's knowledge has to be diverse

I KNOW it may be a considerable shock to many readers, but my long promised book has been published. It is called All About Selling and is published by McGraw Hill, price £8.95.

It has been a long time coming - about three elapsed years in all - but I made it eventually.

Its appearance has caused me to reflect on a few things related to my literary efforts on the selling topic.

When a previous editor of *Computer Weekly*, Malcolm Peltu, originally agreed to publish the Sales Bit it was intended to be an occasional single column with an initial commitment of six, followed by the agreement that with a bit of luck I could soldier on for about a year. That was September 1978!

Here I am five years later, still churning two columns a week and

patrons tend to be predictable, governed by clearly parameterised job functions. There are clear standards of protocol within a clearly defined industry or profession.

Selling embraces all people, all industries, all products and every shade of objective or subjective behaviour. It is a minefield of problems and opportunities, in which survival is absolutely dependent on the applications knowledge and many essential human characteristics, such as sensitivity, perception and creativity.

I therefore find it quite astonishing that in this day and age selling is to many a profession with less social standing than that of the accountant, the lawyer, the doctor and so on.

Within many companies the salesman is still a "necessary evil", a fast talking trickster who may

Selling embraces all people, all industries, all products and every shade of objective or subjective behaviour. It is a minefield of problems and opportunities, in which survival depends on applications knowledge

hoping there are still a few of you out there managing to stay the course.

Writing a book is a bit like having a baby. At first it is all promise and excitement, unable to wait for the "big day", but having to. As time goes on the promise and excitement give way to discomfort and anxiety and, as the final months draw near, the greatest emotion is to get it over with and be rid of the stress of it all.

Suddenly, just when you're thinking it will never arrive, it appears, almost taking you by surprise. There it is, the fruit of your labour held in your hands.

It may be ugly, but it's all yours.

Of course, publishers and colleagues, friends and neighbours tell you whatever it is they believe an author wants to hear. What he really needs to hear is the truth, however, which may be something else.

So, it will please me considerably if any readers of my book will do me the favour of letting me have their reactions, so that I can get a feel of what the world really thinks.

earn lots of money but belongs way down the social scale.

Let's get this right: salespeople are special!

Sure, there are plenty of people working in a selling role within the computer industry who should never be in the job, but they should not be allowed to influence our judgment of the kind of performance and achievement we should expect of a truly professional salesman.

I guess it is rather self-patronising to quote from one's own book, but I will. "Selling is the purveyor of the kind of performance and achievement we should expect of a truly professional salesman."

Selling is a bridge between the maker and the user; it is the justification and outlet for the product of a business enterprise in its ability to persuade potential customers to try, buy and use.

"Selling is the process on which the health, growth and survival of a commercial business ultimately

For those new to selling it must be clearly understood that, without the basic skills and disciplines of the profession, true and continuing success will never be achieved

Flipping through the contents page of the book I was reminded of the broad dimensions and complexities of selling as a professional occupation.

I am not referring to the typical old fashioned "company representative", but to the fully trained, accomplished salesman with a broad spectrum of industry and application experience, calling on a wide range of basic selling skills: product and applications knowledge; identifying new business opportunities; territory management; interpersonal communications; controlling the sales negotiations; overcoming sales resistance; closing the sale; handling political situations; and understanding business finance.

There are but a few of the areas in which the salesman must gain complete understanding and fluency of action.

As far as I can see, the diversity of knowledge, action and discipline required is far greater than for most other professions. Most occu-

depends. It is the sustaining force of a free enterprise.

"To describe it merely as a transfer of goods, services or ideas from one party to another in exchange for money is a serious understatement."

Of course, all this assumes that the salesman is constantly striving to advance and sustain his professional skills, no less so than if he were an engineer, a scientist, a teacher or an accountant.

For those new to selling it must be clearly understood that, without the basic skills and disciplines of the profession, true and continuing success won't be achieved.

Alan Williams

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